Rehabilitation Research & Training Center in Blindness & Low Vision

MISSISSIPPI STATE UNIVERSITY
ANNUAL REPORT #3
SUMMARY

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Grant Period: Sept. 30, 1983 to Sept. 29, 1984
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NHR Grant G008103981

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MISSISSIPPI STATE UNIVERSITY

REHABILITATION RESEARCH

AND

TRAINING CENTER

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1 March 1983 - 30 June 1984

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Mississippi State University
Rehabilitation Research and Training Center
in Blindness and Low Vision

P.O. Drawer 5365, Mississippi State, MS 39762

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In conformity with Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973, T. K. Martin, Vice President, 610 Allen Hall, P.O. Drawer J, Mississippi State, Mississippi 39762, office telephone number 325-3221, has been designated as the responsible employee to coordinate efforts to carry out responsibilities and make investigation of complaints relating to discrimination.

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HISTORICAL BACKGROUND

A. Mississippi Rehabilitation Research and Training Center

1. Origin. In October, 1981, Mississippi State University in cooperation with the University of Mississippi Center for Handicapped Research and Training and the Division of Ophthalmology of the University of Mississippi Medical Center established the Rehabilitation Research and Training Center in Blindness and Low Vision (RTC/B-LV) at Mississippi State University. The RTC/B-LV uses the capabilities of these universities to impact, through research, training and dissemination, the vocational and employment adjustment problems resulting from blindness and visual impairments. Research and training laboratories for the Center's program consist of rehabilitation facilities and agencies, educational institutions, and industries for blind and severely impaired persons.

The origin and development of the Center has been influenced by the fact that it is a cooperative effort of two universities located on three separate campuses. This cooperation permits the Center to be able to call upon the resources and expertise of the three campuses in addressing the rehabilitation problems of severely visually impaired people. The Center has been able to gain strong support from state and private rehabilitation agencies and facilities in developing and conducting its research and training program. For example, in 1981-1982, three research professionals from three different research facilities were assigned to two RTC/B-LV research projects at no cost to the Center. Cooperation among the universities, agencies, and facilities will continue to be a key factor in the development of the research and training program of the RTC/B-LV.

2. Philosophy. Like other successful Rehabilitation Research and Training Centers, accomplishing the RTC/B-LV's mission requires that a broad strategy be used in the Center's operation. The strategy rests on four cornerstones. These cornerstones are: (a) Research, (b) Development, (c) Dissemination, and (d) Utilization.

(a) Research. The research program of the RTC/B-LV focuses on the development of a Career Development Intervention Strategy (CDIS) model. The aim of the CDIS model is to provide guidance and a comprehensive research and training approach to the employment and vocational adjustment problems of blind and visually impaired persons. Each of the Center's research projects, while addressing issues related to the enhancement of the employment potential of the blind/severely visually impaired individual and the alleviation of major problems encountered by these people in the work place and in activities of daily living, will also contribute to the overall development of the Center's CDIS model.

In collaboration with consumers, practitioners, and the National Advisory Council, the Center's staff will attempt to identify gaps in knowledge which limit the effective delivery of CDIS services to blind or severely visually impaired persons. While these potential users are involved in identifying knowledge gaps, they will be involved in project planning and other related activities. This involvement argues well for a research and training program which not only meets the needs of the field, but one with products which will be used by the field.

(b) Development. In order to ensure utilization of its products, the RTC/B-LV plans to package and distribute its products in a manner which will maximize utilization by the field. Consequently, after year 3 considerable

effort will be devoted to the development of packages and marketing strategies with the greatest utilization "payoff".

(c) Dissemination. The dissemination efforts of the Center will depend largely upon the nature of the Center's products. Some products are most appropriately disseminated along traditional lines - publications in scholarly journals, monographs, conferences, etc. Others might best be distributed through train-the-trainer conferences, audio-visual media, etc.

(d) Utilization. Utilization is a concern of the Center from the initiation to the completion of a research and training project. Products developed and disseminated with the practitioner in mind will enhance utilization. Additionally, Center staff will be available to provide technical assistance in the use of Center products.

3. Goals. The mission outcome for the research and training programs of the RTC/B-LV is the prevention and minimization of the personal and family, physical, mental, social, educational, vocational, and economic effects of blindness and severe visual disabilities. The core of the research and training programs of the RTC/B-LV is to identify, assess, and augment services intended to facilitate the employment and career development of blind and visually impaired persons.

The ability of blind persons to choose, locate, maintain, upgrade and succeed in employment may be understood as aspects of the complex process of career development. Research and training bases are needed to develop and implement strategies to facilitate the career development of blind persons. Resulting intervention strategies should incorporate appropriate prevocational training services to enable a blind person to function effectively in the workplace. Intervention strategies should also recognize and strive to ameliorate attitudes which have restricted the employment possibilities of members of this population.

In recognition of this need for career development services for blind persons, the RTC/B-LV developed a Career Development Intervention Strategies Model. The CDIS illustrates the relationships between the career development stage for which an intervention is appropriately intended, the intervening services, the site at which the services are to be provided, and the outcomes which could result from the intervention. The research and training projects of the RTC/B-LV are intended to address career needs identified by utilizing the CDISM. To be specific, the core research question being addressed by the RTC/B-LV is:

> How effectively do each of the career development services provided at each service delivery site contribute to the employment of blind persons?

Table I (pages 7 - 21) summarizes the relationships between the CDIS, the core research question, and the activities of the RTC/B-LV.

(a) Research. Since February 1, 1983, considerable progress has been made by the RTC staff on Center sponsored research activities. Of the seven projects in progress on 2/1/83, six will have either have been completed (R-3, R-4, R-5, and R-6) or in a second phase with interim reports (R-1, R-2) by December 31, 1984. Additionally, one project (R-10) initiated in FY 83-84 will also have been completed by December 31, 1984. Technical reports will be available for each of these research projects as quickly after completion as clerical and publication processing permits. Considerable research staff effort has been devoted to enhancing the utilization value of research products by

involving rehabilitation practitioners and consumers in the research activities of the Center. The primary vehicle chosen for this effort has been field based research projects (R-2, R-6, R-1, R-5, R-7a, R-8, and R-9). Cooperating with the RTC in the field based research projects have been the Mississippi Vocational Rehabilitation for the Blind (R-9), Royal Maid Association for the Blind (R-6, R-7a, R-8), Mississippi Industries for the Blind (R-1, R-2, R-5), Ellisville (MS) State School for the Blind (R-8), Jackson (MS) City Schools, Special Education Program (R-8) and Arkansas Enterprises for the Blind (R-7a). Each of these research facilities, because of its cooperative nature, has not only augmented the research efforts of the RTC, but has also heightened the field relevancy and utilization value of the research effort.

An additional research goal of the RTC is to generate additional research activities in the Center's core area. As a result of Center staff research and training activities, three doctoral dissertations and one masters thesis have been completed. The doctoral dissertations have been based on the R-4 "Functional Outcome for Blind/Severely Visually Impaired Clients of State Rehabilitation Agencies" data base; and the masters thesis on the R-6 "Development of Electromechanical Vocational Assessment Technology for Finger Dexterity and Hand-Foot Coordination." The dissertation titles and authors are Dietz, Peter, Wage Status Outcome for Blind and Legally Blind Rehabilitation Clients as a Function of Gender and Urban/Rural Residency; Nelms, Robert W., Personal and Program Variables Related to the Successful Rehabilitation of Persons who are Diabetic and Blind; and Schmitt, Sue, Predicting the Work Status Outcome of Blind Women. The masters thesis, Reliability and Criterion Validity of a Manual Dexterity Task for Predicting Job Performance of the Visually Impaired, was written by Ms. Vickie Robbins.

(b) Training activities. Part of the Center's mission is to provide training based upon its research projects. The RTC's training calendar has been extremely active since January of 1983. Two types of training programs have been sponsored by the Center; long term training (university curriculum) and short term training (in-service and continuing education). Each training project summary report indicates which type of training was provided through that particular training effort.

The Center has also actively sought opportunities to co-sponsor programs or work cooperatively on training projects. Since the last continuation application the Center has worked cooperatively with Auburn University Rehabilitation Facility Regional Rehabilitation Continuing Education Program (T-30, T-37); the University of Tennessee Regional Rehabilitation Continuing Education Program (T-28); and the University of Alabama at Birmingham Rehabilitation Research and Training Center, RT-19 (T-28).

The 1983 MacFarland Seminar of the American Association of Workers for the Blind was conducted by the RTC. In Fall, 1984, the RTC will co-sponsor with the University of California-San Francisco RTC (RT-23) and the University of Arkansas-Little Rock RTC (RT-31) a State-of-the-Art Seminar in Rehabilitation Research on Deaf-Blindness. A description of each of the Center's training projects appears in the training section.

(c) Dissemination and materials development activities. Information dissemination has been an integral part of the program of the RTC since it was established in October, 1981. Information dissemination efforts occur in at least four ways: (1) journal publications, (2) Center publications, (3) lay publications and other media, and (4) oral presentations/papers at professional, lay, and consumer organizations. Since the last reporting period, Center staff

have published articles in professional journals. The Center has published: Electromechanical Vocational Assessment Manuals; Work Samples and the Visually Impaired; State-of-the-Art Review and Resource Manual by J. Michael Peterson, Charles Capps and Michael Moore; Career Development of Blind and Visually Impaired Persons; Proceedings of the MacFarland Seminar by William H. Graves, Susan Jay Spungin, James Kesteloot, J. Michael Peterson, Martha Bagley, and Lawrence Scadden; and Worksight, the Center newsletter. Articles about the Center have appeared in newspapers, newsletters, and university publications of general interest to the community (see D-30 and D-50). Some of the articles about the Center have appeared in the Mississippi State University Alumnus; the Memphis (Tenn.) Commercial Appeal; and The Bulldogs, a football souvenir magazine.

Center staff have made presentations about center research efforts to a significant member of organizations (consumer, lay, and professional) interested in visual impairments and blindness including, e.g., the American Council of the Blind, National Federation of the Blind, National Rehabilitation Association, Council of Exceptional Children, National Council of State Agencies for the Blind, and the Mississippi Academy of Ophthalmology. A complete listing with descriptions of the dissemination activities appears in the discussion of the dissemination projects.

(d) Other activities of the Center. In December, 1983, as part of the RTC/B-LV Evaluation Plan, Dr. Lawrence Scadden, Rehabilitation Technology, Inc., and Ms. June Morris, Director, Department of Educational Research, American Printing House for the Blind reviewed the research and training program of the Center.

In January, 1984, the Advisory Council of the Rehabilitation Research and Training Center on Blindness and Low Vision met on the campus of Mississippi State University. Training and research projects, both proposed and completed, were reviewed by the Advisory Council.

Members of the RTC/B-LV staff have made significant contributions to rehabilitation research and to the field of blindness and low vision since the last reporting period. Dr. Steve Machalow, RTC/B-LV Research Director, has been elected to the membership of the Research Committee of the National Association of Rehabilitation Research and Training Centers. Ms. Martha Bagley, RTC/B-LV Training Director, has been appointed to the American Foundation for the Blind's (AFB) Task Force on Career Education and Development. Dr. J. Michael Peterson, RTC/B-LV Research Associate for Vocational Evaluation, has been appointed to the AFB Task Force on Vocational Evaluation of Blind and Visually Impaired Persons. Dr. William Graves, RTC/B-LV Director, has been appointed to the AFB Committee of the Working Years and serves as its vice-chairman. Dr. William H. Graves has been appointed to the Governor's Statewide Comprehensive Planning Study, Blind and Visually Handicapped. He serves as chairperson of the Task Force IV: Professional Personnel Preparation. Ms. Martha Bagley has been appointed as a member of Task Force V: Community Services. The purpose of the study is to develop a state plan to meet the needs of blind and visually handicapped persons ages 0 to 22 and relate these needs to the adult services delivery system to facilitate the transition to adult services. Dr. Connie McCaa, Research Associate for R-1: Demonstration of a Low Vision Aid Clinic as an Employment Enhancement Technique, has been awarded a National Eye Institute Senior Research Fellowship for 1984-1985. She will study and complete research activities on corneal and anterior segment eye disease.

The RTC/B-LV has provided consultation and technical assistance to a number of rehabilitation agencies since February, 1983. For example, it is working with the Arizona Division of Services for the Blind to develop a placement strategy for the agency. Cooperating with the RTC/B-LV in this effort is the San Diego State University Regional Rehabilitation Continuing Education Program.

The RTC/B-LV staff is cooperating with the University of Arkansas Rehabilitation Research and Training Center sponsored Institute on Rehabilitation Issues (IRI) on the rehabilitation of deaf-blind individuals. Two chapters in the IRI training document have been written by the RTC Director and RTC Research Director.

The RTC/B-LV has begun to enjoy an international reputation for its research in the employability issues of blindness. The Center has had visitors from Zambia, Zimbabwe, England, and Sweden to examine research activities of the Center. Additionally, one to three letters are written monthly answering questions from other nations about the Center's research activities.

Table 1

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
I. CDIS Model Development	Conceptual Model	R-3	Assessment of Current Career Development Intervention Services and Needs of the Blind/Severely Visually Impaired Individuals	T-2	Impacting on the Employability of Persons with Severe Visual Disabilities Through Research	D-2	Worksight
				T-3	Introduction to Rehabilitation Research and Training in the Area of Employment of Blind and Visually Impaired Persons	D-3	Rehabilitation Research Activities Related to Employment of Severely Visually Impaired Persons
				T-5	Rehabilitation Research and Training Priorities in Employment of Blind and Severely Visually Impaired Persons: A National Focus	D-4	Rehabilitation Research and its Relationship to Employment of Severely Visually Impaired Persons
				T-14	Planning Strategy for Rehabilitation Research and Training in Employment of Blind and Severely Visually Disabled Persons within Mississippi	D-5	An Introduction to the Rehabilitation Research and Training Center in Blindness and Low Vision
				T-16	Career Development Workshop-Mississippi School for the Blind	D-6	Orientation to Rehabilitation Research and Training Related to Employment of Severely Visually Impaired Persons
				T-17	An Introduction to the Career Development of Blind Persons	D-7	Rehabilitation Research and Training Activities
				T-20	Vocational Specialist for Visually Impaired Persons	D-11	Rehabilitation Counselor Certification Worker: Toward Recognition as Providers of Services to the Industrially Disabled
				T-21	Rehabilitation Research and its Application to Enhancement of Employment of Blind and Visually Impaired Persons	D-12	Rehabilitation Research and Educational Services for Blind and Visually Impaired Persons
				T-24	Career Development of Blind and Visually Impaired Persons	D-13	Exhibit at the Starkvile Disability Awareness Fair
				T-26	Assessment of Current Career Development Intervention Services and Needs of Blind and Severely Visually Impaired Persons	D-15	RT-30 Project Information Sheets
						D-17	Overview of the Rehabilitation Research and Training Center

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CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
				T-27	Career Development of blind and Visually Impaired Persons	D-22	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision
				T-28	Blindness and Low Vision: State-of-the-Art in Medical and Vocational Programming	D-23	Special Program Report, RT-30
				T-29	Career Development and Vocational Programming	D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons
				T-30	Issues in Working with the Blind and Visually Impaired-Training for Facility Personnel	D-26	Current Activities of the Mississippi State Unviersity Rehabilitation Research and Training Center in Blindness and Low Vision
				T-31	Career Development and Placement of Blind and Visually Impaired Persons	D-27	Journal Publications
						D-28	Worksight
				T-34	Rehabiltiation of Blind and Visually Impaired Persons	D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
				T-36	Placement of Blind and Visually Impaired Persons Through Career Development Interventions	D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
				T-37	Georgia Department of Vocational Rehabilitation Evaluators' Training	D-40	The Career Development Intervention Strategy: Planning for the Transition from Education to Adult Services for Blind and Visually Impaired Persons
				T-38	Blindness and Low Vision: Maximizing Employment Through Research	D-45	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
				T-39	Career Development Strategies and the Employment of Blind Persons; Annual Alliance Meeting	D-46	Work, Success, and the Career Development of Blind and Visually Impaired Persons
						D-48	Work and Success as They Relate to the Career Development of Blind and Visually Impaired Persons

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
II. CDIS Services	A.Employment Support Services	R-1	Demonstration of a Low Vision Aid Clinic as an Employment Enhancement Technique	T-2	Impacting on the Employability of Persons with Severe Visual Disabilities Through Research	D-2	Worksight
						D-3	Rehabilitation Research Activities Related to Employment of Severely Visually Impaired Persons
				T-3	Introduction to Rehabilitation Research and Training in the Area of Employment of Blind and Severely Visually Impaired Persons	D-4	Rehabilitation Research and its Relationship to Employment of Severely Visually Impaired Persons
				T-5	Rehabilitation Research and Training Priorities in Employment of Blind and Severely Visually Impaired Persons: A National Focus	D-5	An Introduction to the Rehabilitation Research and Training Center on Blindness and Low Vision
						D-6	Orientation to Rehabilitation Research and Training Related to Employment of Severely Visually Impaired persons
				T-10	Low Vision Issues and the Operation of a Low Vision Clinic		
						D-7	Rehabilitation Research and Training Activities of the RTC in Blindness and Low Vision
				T-14	Planning Strategy for Rehabilitation Research and Training in Employment of Blind and Visually Disabled Persons within Mississippi	D-8	Demonstration of Low Vision Aids
						D-9	The Role of the RTC in the Low Vision Aid Clinic Project located at the University of Mississippi Medical Center
				T-16	Career Development Workshop-Mississippi School for the Blind		
				T-20	Vocational Specialist for Visually Impaired Persons	D-10	Low Vision Enhancement and Low Vision Aid Service
				T-21	Rehabilitation Research and its Application to Enhancement of Employment of Blind and Visually Impaired Persons	D-12	Rehabilitation Research and Educational Services for Blind and Visually Impaired Persons
						D-15	RT-30 Project Information Sheets
				T-32	Diabetes/Endocrine Conference, "Preventing Blindness in the Diabetic"	D-17	Overview of the Rehabilitation Research and Training Center
				T-34	Rehabilitation of Blind and Visually Impaired Persons	D-21	Low Vision Aids

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS,

TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
				T-36	Placement of Blind and Visually Impaired Persons Through Career Development Interventions	D-22	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
						D-23	Special Program Report, RT-30
				T-38	Blindness and Low Vision: Maximizing Employment Through Research	D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons
						D-26	Current Activities of the Mississippi State University Research and Training Center on Blindness and Low Vision
						D-27	Journal Publications
						D-28	Worksight
						D-30	Consumer and Community Education
						D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
						D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
						D-41	Diagnosis and Treatment of Eye Disease that Result in Low Vision
						D-45	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
		R-5	Productivity and Comfort of the Visually Impaired Worker as a Function of Low Vision Aid Usage and Illumination Level and Color Contrast Modification	T-2	Impacting on the Employability of Persons with Severe Visual Disabilities Through Research	D-2	Worksight
				T-3	Introduction to Rehabilitation Research and Training in the Area of Employment of Blind and Severely Visually Impaired Persons	D-3	Rehabilitation Research Activities Related to Employment of Severely Visually Impaired Persons
				T-5	Rehabilitation Research and Training Priorities in Employment of Blind and Severely Visually Impaired Persons: A National Focus	D-4	Rehabilitation Research and its Relationship to Employment of Severely Visually Impaired Persons
				T-6	Rehabilitation Research and Protected Employment for Blind and Severely Visually Impaired Individuals	D-5	An Introduction to the Rehabilitation Research and Training Center on Blindness and Low Vision
				T-14	Planning Strategy for Rehabilitation Research and Training in Employment of Blind and Visually Disabled Persons within Mississippi	D-6	Orientation to Rehabilitation Research and Training Related to Employment of Severely Visually Impaired Persons
				T-16	Career Development Workshop-Mississippi School for the Blind	D-7	Rehabilitation Research and Training Activities of the RTC in Blindness and Low Vision
				T-18	Regional Low Vision Workshop, "A Look Back and A Look Ahead"	D-12	Rehabilitation Research and Educational Services for Blind and Visually Impaired Persons
				T-20	Vocational Specialist for Visually Impaired Persons	D-14	Rehabilitation Research and Training and Rehabilitation Agencies; Job Site Modification
				T-21	Rehabilitation Research and its Application to Enhancement of Employment of Blind and Visually Impaired Persons	D-15	RT-30 Project Information Sheets
				T-22	Rehabilitation and Work Evaluation in an Industrial Setting	D-17	Overview of the Rehabilitation Research and Training Center
				T-24	Career Development of Blind and Visually Impaired Persons	D-18	The Effects of Illumination and Color Contrast Modifications on the Productivity and Comfort of Low-Vision Workers
						D-22	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision

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CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
				T-27	Career Development of Blind and Visually Impaired Persons	D-23	Special Program Report, RT-30
				T-28	Blindness and Low Vision: State-of-the-Art in Medical and Vocational Programming	D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons
				T-34	Rehabilitation of Blind and Visually Impaired Persons	D-26	Current Activities of the Mississippi State university Rehabilitation Research and Training Center on Blindness and Low Vision
				T-36	Placement of Blind and Visually Impaired Persons Through Career Development Interventions	D-27	Journal Publications
				T-37	Georgia Department of Vocational Rehabilitation Evaluators' Training	D-28	Worksight
						D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
				T-38	Blindness and Low Vision: Maximizing Employment Through Research	D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
						D-38	Accomodating the Needs of Visually Impaired Workers in the Work Environment: Visual Demands Protocol
						D-45	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
		R-9	Assessment of Visual and Psychomotor Performance as a Function of Varying Stimulus conditions.	T-34	Rehabilitation of Blind and Visually Impaired Persons	D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
				T-36	Placement of Blind and Visually Impaired Persons Through Career Development Interventions	D-35	Implicaitons of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
						D-38	Accomodating the Needs of Visually Impaired Workers in the Work Environment: Visual Demands Protocol
						D-45	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision
3	B.Client Vocational	R-2	Industrial Services Program Model for Sheltered Workshops for the Blind	T-2	Impacting on the Employability of Persons with Severe Visual Disabilities Through Research	D-2	Worksight
						D-3	Rehabilitation Research Activities Related to Employment of Severely Visually Impaired Persons
				T-3	Introduction to Rehabilitation Research and Training in the Area of Employment of Blind and Severely Visually Impaired Persons	D-4	Rehabilitation Research and its Relationship to Employment of Severely Visually Impaired Persons
				T-5	Rehabilitation Research and Training Priorities in Employment of Blind and Severely Visually Impaired Persons: A National Focus	D-5	An Introduction to the Rehabilitation Research and Training Center on Blindness and Low Vision
				T-6	Rehabilitation Research and Protected Employment for Blind and Severely Visually Impaired Individuals	D-6	Orientation to Rehabilitation Research and Training Related to Employment of Severely Visually Impaired Persons
				T-13	Industrial Services Programs Models and their Relationship to Industries for the Blind	D-7	Rehabilitation Research and Training Activities of the RTC in Blindness and Low Vision
				T-14	Planning Strategy for Rehabilitation Research and Training in Employment of Blind and Severely Visually Disabled Persons within Mississippi	D-12	Rehabilitation Research and Educational Services for Blind and Visually Impaired Persons
						D-17	Overview of the Rehabilitation Research and Training Center

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CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
				T-20	Vocational Specialist for Visually Impaired Persons	D-22	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
				T-21	Rehabilitation Research and its Application to Enhancement of Employment of Blind and Visually Impaired Persons	D-23	Special Program Report, RT-30
						D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons
				T-22	Rehabilitation and Work Evaluation in an Industrial Setting		
						D-26	Current Activities of the Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision
				T-27	Career Development of Blind and Visually Impaired Persons		
				T-34	Rehabilitation of Blind and Visually Impaired Persons	D-27	Journal Publications
						D-28	Worksight
						D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
						D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
						D-45	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
		R-8	Prevocational Work Ability and Success Acquisition Training of Deaf-Blind and Other Multiply Handicapped Visually Impaired Individuals	T-34	Rehabilitation of Blind and Visually Impaired Persons	D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
				T-39	Career Development Strategies and the Employment of Blind Persons; Annual Alliance Meeting	D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
						D-45	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
	Client Assessment Services	R-6	Development of Electromechanical Vocational Assessment Technology for Finger Dexterity and Hand-Foot Coordination a.Master Thesis: (Robbins, Vickie L.) Reliability and Criterion Validity of a Manual Dexterity Task for Predicting Job Performance of the Visually Impaired, 1983.	T-2	Impacting on the Employability of Persons with Severe Visual Disabilities Through Research	D-1	Demonstration of Electromechanical Work Samples for Severely Visually Impaired Persons
				T-3	Introduction to Rehabilitation Research and Training in the Area of Employment of Blind and Severely Visually Impaired Persons	D-2	Worksight
				T-5	Rehabilitation Research and Training Priorities in Employment of Blind and Severely Visually Impaired Persons: A National Focus	D-3	Rehabilitation Research Activities Related to Employment of Severely Visually Impaired Persons
				T-6	Rehabilitation Research and Protected Employment for Blind and Severely Visually Impaired Individuals	D-4	Rehabilitation Research and its Relationship to Employment of Severely Visually Impaired Persons
				T-12	Evaluation and Work Abilities of Multihandicapped Blind Individuals	D-5	An Introduction to the Rehabilitation Research and Training Center on Blindness and Low Vision
				T-14	Planning Strategy for Rehabilitation Research and Training in Employment of Blind and Severely Visually Disabled Persons within Mississippi	D-6	Orientation to Rehabilitation Research and Training Related to Employment of Severely Visually Impaired Persons
				T-16	Career Development Workshop-Mississippi School for the Blind	D-7	Rehabilitation Research and Training Activities of the RTC on Blindness and Low Vision
				T-19	Region IX Deaf-Blind Seminar	D-12	Rehabilitation Research and Educational Services for Blind and Severely Visually Impaired Persons
				T-20	Vocational Specialist for Visually Impaired Persons	D-13	Exhibit at the Starkville Disability Awareness Fair
				T-21	Rehabilitation Research and its Application to Enhancement of Employment of Blind and Visually Impaired Persons	D-15	RT-30 Project Information Sheets
						D-22	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
						D-23	Special Program Report, RT-30
						D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
				T-22	Rehabilitation and Work Evaluation in an Industrial Setting	D-25	Rehabilitation Research and Training: Implications for Managers of Protected Industries
				T-23	"Keys to Success"		
				T-24	Career Development of Blind and Visually Impaired Persons	D-26	Current Activities of the Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
				T-26	Assessment of Current Career Development Intervention Services and Needs of Blind and Severely Visually Impaired Persons	D-27	Journal Publications
						D-28	Worksight
				T-27	Career Development of Blind and Visualy Impaired Persons	D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
				T-28	Blindness and Low Vision: State-of-the-Art in Medical and Vocational Programming	D-34	Predicting Job Performance of the Visually Impaired: Evaluation of a Manual Dexterity Test
				T-29	Career Development and Vocational Programming	D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
				T-34	Rehabilitation of Blind and Visually Impaired Persons	D-37	Vocational Assessment Projects at the Mississippi State University Research and Training Center on Blindness and Low Vision
				T-37	Georgia Department of Vocational Rehabilitation Evaluator's Training		
				T-39	Career Development Strategies and the Employment of Blind Persons; Annual Alliance Meeting	D-45	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
						D-50	Consumer and Community Education

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
		R-7a	Modification and Adaptation of the Vocational Education Readiness Test for the Blind/ Severely Visually Impaired	T-2	Impacting on the Employability of Persons with Severe Visual Disabilities Through Research	D-2	Worksight
				T-3	Introduction to Rehabilitation Research and Training in the area of Employment of Blind and Severely Visually Impaired Persons	D-3	Rehabilitation Research Activities Related to Employment of Severely Visually Impaired Persons
				T-5	Rehabilitation Research and Training Priorities in Employment of Blind and Severely Visually Impaired Persons: A National Focus	D-4	Rehabilitation Research and its Relationship to Employment of Severely Visually Impaired Persons
				T-14	Planning Strategy for Rehabilitation Research and Training in Employment of Blind and Severely Visually Disabled Persons within Mississippi	D-5	An Introduction to the Rehabilitation Research and Training Center in Blindness and Low Vision
				T-20	Vocational Specialist for Visually Impaired Persons	D-6	Orientation to Rehabilitation Research and Training Related to Employment of Severely Visually Impaired Persons
				T-21	Rehabilitation Research and its Application to Enhancement of Employment of Blind and Visually Impaired Persons	D-7	Rehabilitation Research and Training Activities of the RTC on Blindness and Low Vision
				T-28	Blindness and Low Vision: State-of-the-Art in Medical and Vocational Programming	D-12	Rehabilitation Research and Educational Services for Blind and Visually Impaired Persons
				T-29	Career Development and Vocational Programming	D-15	RT-30 Project Information Sheets
				T-34	Rehabilitation of Blind and Visually Impaired Persons	D-17	Overview of the Rehabilitation Research and Training Center
				T-37	Georgia Department of Vocational Rehabilitation Evaluator's Training	D-22	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
						D-23	Special Program Report, RT-30
						D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons
						D-25	Rehabilitation Research and Training: Implications for Managers of Protected Industries

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
						D-26	Current Activities of the Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
						D-27	Journal Publications
						D-28	Worksight
						D-29	Establishing Entrance Requirements for Vocational Programs
						D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
						D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
						D-37	Vocational Assessment Projects at the Mississippi State University Research and Training Center on Blindness and Low Vision
						D-45	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
						D-50	Consumer and Community Education
R-7b	Training Opportunities Profile for Visually Impaired Persons: (TOP-VIP)			T-7	Career Assessment of Severely Visually Impaired Persons: A Model for Public Schools	D-12	Rehabilitation Research and Educational Services for Blind and Visually Impaired Persons
				T-8	Issues and Recommendations Concerning Vocational Assessment of Severely Visually Impaired Persons	D-16	Vocational Assessment of the Visually Impaired
						D-22	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
				T-9	Vocational Assessment and Rehabilitation of Visually Impaired Persons	D-23	Special Program Report, RT-30

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
				T-16	Career Devleopment Workshop-Mississippi School for the Blind	D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons
				T-20	Vocational Specialist for Visually Impaired Persons	D-26	Current Activities of the Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision
				T-24	Career Development of Blind and Visually Impaired Persons	D-27	Journal Publications
				T-27	Career Development of Blind and Visually Impaired Persons	D-28	Worksight
				T-34	Rehabilitation of Blind and Visually Impaired Persons	D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
				T-36	Placement of Blind and Visually Impaired persons Through Career Development Interventions	D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
				T-37	Georgia Department of Vocational Rehabilitation Evaluator's Training	D-39	Work Samples and Visually Impaired Persons
						D-45	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision
III. Employment Functional Outcome	A.Competitive Employment	R-4	Functional Outcome of Blind/ Severely Impaired Clients of State Rehabilitation Agencies.	T-2	Impacting on the Employability of Persons with Severe Visual Disabilities Through Research	D-2	Worksight
				T-3	Introduction to Rehabilitation Research and Training in the area of Employment of Blind and Severely Visually Impaired Persons	D-3	Rehabilitation Research Activities Related to Employment of Severely Visually Impaired Persons
				T-5	Rehabilitation Research and Training Priorities in Employment of Blind and Severely Visually Impaired Individuals	D-4	Rehabilitation Research and its Relationship to Employment of Severely Visually Impaired Persons
				T-14	Planning Strategy for Rehabilitation Research and Training in Employment of Blind and Severely Visually Disabled Persons within Mississippi	D-5	An Introduction to the Rehabilitation Research and Training Center on Blindness and Low Vision
						D-6	Orientation to Rehabilitation Research and Training Related to Employment of Severely Visually Impaired Persons

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS, TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
				T-20	Vocational Specialist for Visually Impaired Persons	D-7	Rehabilitation Research and Training Activities of the RTC in Blindness and Low Vision
				T-21	Rehabilitation Research and its Application to Enhancement of Employment of Blind and Visually Impaired Persons	D-12	Rehabilitation Research and Educational Services for Blind and Visually Impaired Persons
				T-24	Career Development of Blind and Visually Impaired Persons	D-17	Overview of the Rehabilitation Research and Training Center
				T-25	Functional Outcome of Vocational Rehabilitation for Blind and Visually Impaired Persons	D-19	Preliminary Findings of Research Related to Functional Outcomes of Vocational Rehabilitation for Blind and Visually Impaired Persons
				T-29	Career Development and Vocational Programming	D-20	Rehabilitation Research in Blindness and Low Vision Related to Vocational Rehabilitation Outcomes
				T-33	History, Philosophy, and Trends in Rehabilitation	D-22	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision
				T-34	Rehabilitation of Blind and Visually Impaired Persons	D-23	Special Program Report, RT-30
				T-35	Florida Division of Blind Services Training Seminar	D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons
				T-37	Georgia Department of Vocational Rehabilitation Evaluator's Training	D-26	Current Activities of the Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision
				T-38	Blindness and Low Vision: Maximizing Employment Through Research	D-27	Journal Publications
				T-39	Career Development Strategies and the Employmnt of Blind Persons; Annual Alliance Meeting	D-28	Worksight
						D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
						D-32	Functional Outcome of the Rehabilitation Process of Blind and Legally Blind Clients for Four State Vocational Rehabilitation Agencies

RELATIONSHIP BETWEEN CAREER DEVELOPMENT INTERVENTION STRATEGY MODEL, RESEARCH PROJECTS,

TRAINING PROJECTS, AND DISSEMINATION PROJECTS.

CDIS Parameter	Type of Service	Research Project No.	Research Project Title	Training Project No.	Training Project Title	Dissemination Project No.	Dissemination Project Title
						D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
						D-43	Outcome of the Vocational Rehabilitation Process for Blind Women in Four State Agencies
						D-44	The Impact of Rehabilitation Services on the Employment Status and Job Seeking Skills of Blind Clients of Four Rehabilitation Agencies.
						D-45	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision
						D-46	Work, Success, and the Career Development of Blind and Visually Impaired Persons
						D-48	Work and Success as They Relate to the Career Development of Blind and Visually Impaired Persons
		R-10	Selected Career Development Factors and the Outcome of Vocational Rehabilitation Services provided Middle-Aged/ Older Legally Blind Individuals			D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects
						D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers
						D-45	Mississippi State University Rehabilitation Research and Training Center on Blindness and Low Vision

RESEARCH SUMMARY

Totals: New 4 Continuing 6 Completed 1
Discontinued 0 Proposed 3 Combined 0

Category	Proj. No.	Project Title	Status	Primary Target Group
Delivery of Services	R-1	Demonstration of a Low Vision Aid Clinic as an Employment Enhancement Technique	Continuing	Blind and Legally Blind Workers
	R-2	Industrial Services Program Model for Sheltered Workshops for the Blind	Continuing	Blind and Legally Blind Employees
	R-3	Assessment of Current Career Development Intervention Services and Needs of the Blind/Severely Visually Impaired Individual	Continuing	Blind and Legally Blind Individuals
	R-5	Illumination Level/Color Contrast Studies as Related to Worker Productivity	Completed	Legally Blind Workers
	R-6	Development of Electro-mechanical Vocational Assessment Technology for Finger Dexterity and Hand/Foot Coordination	Continuing	Multihandicapped Blind and Legally Blind Individuals
	R-7a	Modification and Adaptation of the Vocational Education Readiness Test for Blind/ Severely Visually Impaired Individuals (VERT)	Continuing	Blind and Legally Blind Employees
	R-7b	Training Opportunities Profile for Visually Impaired Persons (TOP-VIP)	Continuing	Blind and Legally Blind Employees
	R-8	Prevocational Work Ability and Success Acquisition Training of Deaf-Blind and Other Multiply Handi-capped Visually Impaired Individuals	Continuing	Deaf-Blind and Multihandicapped Visually Impaired Persons

Category	Proj. No.	Project Title	Status	Primary Target Group
Delivery of Services	R-9	Assessment of Visual and Psychomotor Performance as a Function of Varying Stimulus Conditions	Continuing	Legally Blind State VR Agency Clients
	RP-12	Identification and Classification of the Career Transition Problems of Blind Persons Employed as Professionals, Technicians, or Managers	Proposed	Blind and Legally Blind Individuals
	RP-13	Sensory Aid Technology: A Career Development Intervention Strategy for Blind and Visually Impaired Persons	Proposed	Blind and Legally Blind Individuals
Outcome of Services	R-4	Statement of Functional Outcome for Blind/Severely Visually Impaired Clients of State Rehabilitation Agencies	Continuing	State VR Agencies
	R-10	Selected Career Development Factors and the Outcome of Vocational Rehabilitation Services Provided Middle-Aged and Older Legally Blind Individuals	Continuing	Rehabilitation Agencies and Other Interested Organizations
	RP-11	Characteristics of Blind and Severely Impaired Clients of State Rehabilitation Agencies Closed as Homemakers and as Unemployed	Proposed	Rehabilitation Agencies and Other Interested Organizations

SIGNIFICANT RESEARCH AND OUTCOMES

Each of the research projects of the RTC/B-LV has as its overall goal the further development of the Center's CDIS model. Project R-1: "Demonstration of a Low Vision Aid Clinic as an Employment Enhancement Technique," is a demonstration research project which attempts to answer how a Low Vision Aid Clinic might be used as an employment support service by severely visually impaired persons. By modifying the illumination level and color contrast conditions of the work site, project R-5: "Illumination Level/Color Contrast Studies as Related to Worker Productivity," also focused on another type of employment support service. Project R-4: "Statement of Functional Outcome for Blind/Severely Visually Impaired Clients of State Rehabilitation Agencies," addresses the outcome parameter of the CDIS model. An attempt is being made in R-4 to determine the relationship between the client characteristics, CDIS services received, and other variables and outcome. R-3: "Assessment of Current Career Development Intervention Services and Needs of the Blind/Severely Visually Impaired Individual," focuses on the CDIS model and the career development needs of blind children and adults.

A. R-1: Demonstration of a Low Vision Aid Clinic as an Employment Enhancement Technique.

It has become evident that the majority of legally blind persons are not functionally blind. A majority of the visually impaired population is partially sighted. Estimates about the current composition of the visually impaired population may be made from the Model Reporting Area (MRA) data published by the Public Health Service and the National Institutes of Health during the period 1962-1970. As of 1977, partially sighted Americans numbered about 1.7 million, of whom 339 thousand were legally blind. Seventy-five percent of these legally blind persons were partially sighted. They have remaining eyesight or residual vision that can and should be used to cope with their employment and environment. These people will potentially be able to handle many of the problems associated with employment using their aided residual vision.

Finding ways to assist the partially sighted to make better use of remaining eyesight is the long-term goal of R-1. In particular, the kinds of employment difficulties encountered by that population and determining the appropriate low vision aids to assist in coping with employment is the focus of the project. These concerns are of critical interest to rehabilitation agencies for the blind since they are required by law to provide services, including low vision aids, which lead to employment. The results of this study should enhance the ability of the agencies to make decisions in the provision of optical aids for employment. This project has been divided into two phases. Phase 1, completed on July 1, 1984, examined the use of low vision aids in protected workplaces. Phase 2 was initiated on 6/1/84 to determine the contribution of low vision aids in the competitive employment setting.

An overview of the preliminary results for Phase 1 of the R-1 follows as does an overview of Phase 2 of R-1.

Phase 1 Overview

A single subject research design was employed to examine the use of LVA's by 48 subjects randomly selected from the legally blind Mississippi Industries for

the Blind (MIB) work force. These subjects were serially screened for LVA prescription by 1) complete medical and intraocular examination and 2) Goldman field examination. Following LVA prescription as required for maximum efficiency in his/her work environment, specific training was provided to encourage utilization of the LVA on the job.

Of the 48 Ss, 18 (mean age = 38.72; S.D. = 9.45) were prescribed LVA's ($\geq$ 4 + add); 15 (mean age = 32.07; S.D. = 10.94) were prescribed optical aids (OA) ($<$ 4 + add); and 15 (mean age = 42.06; S.D. = 9.48) received no aid because visual functioning could not be improved through the use of an aid. Analyses of payroll data, absentee rate, responses on the Minnesota Satisfactoriness Scale (MSS) questionnaire, and other interview data is being collected at 30 days, 6 months, and 12 months after receipt of the prescription. Preliminary analyses show that the LVA and OA groups have responded favorably to the aids. The LVA and OA groups questioned said that they could work better with the aids and had little or no trouble using them. Eighty percent stated their aids neither resulted in fewer mistakes nor led to increased income. Twenty percent said that their use of aids resulted in increased income and helped them to make fewer mistakes. An interim report with complete data analyses is scheduled for completion in 9/84.

Phase 2 Overview

At the recommendation of the Advisory Council of the RTC/B-LV and the External Evaluators, the research project will include subjects (severely visually impaired, i.e. legally blind) ages 18 to 65 who are employed in the competitive or non-protected labor force. Additionally, because in Phase 1 LVAs which were prescribed for several Ss were not used by the S on-the-job because the job of the S was designed so that the visual demands were either non-existent or minimal, it became obvious that proper low vision care requires a work place analysis to determine how and for what tasks the individual will be required to use her/his residual sight. Therefore, built into Phase 2, is a procedure to assess the visual requirements of the workplace.

On June 1, 1984, every Mississippi eye care professional (ophthalmologist and optometrist) and rehabilitation counselor employed by the Mississippi Vocational Rehabilitation for the Blind were sent a letter requesting referrals of low vision patients/clients aged 18-65 whom they believed might benefit from a low vision examination and a low vision aid(s) in their place of employment. From the referrals, the R-1 project staff will select 40 for further contact. From the 40, 26 Ss will be selected to be included in the study. The 26 will be selected to assure that Ss in the experimental and control groups are similar in terms of age, education, job title, job visual demands, and ocular pathology and history. Thirteen of the Ss will be randomly assigned to the control condition and 13 will be randomly assigned to the experimental condition. Prior to condition asignment, RTC staff will contact the employer of the 40 Ss to determine if (a) the RTC might be permitted to analyze the job of the S to determine the visual requirements and (b) if the employer would be willing to complete the Minnesota Satisfactoriness Scale (MSs) and to permit the S (his/her employee) to complete the Minnesota Satisfaction Questionnaire (MSQ) prior to the receipt of the LVA(s) and 3 months after the receipt of the LVA(s). The RTC staff will also interview the 40 Ss to determine S cooperation as well as ocular pathology history, vocational history, and other disability related variables on which the experimental and control subjects will be matched. From these 40 Ss, 26 will be selected by RTC staff for inclusion in the research project.

Policy, Program, and Practice Changes. While statistical analysis has not been completed at this point, a few clinical observations have been made which seem noteworthy. Early clinical experience indicates that referrals to a low vision aid clinic in a previously underserved geographic region and underserved population will likely require basic medical casé for ocular diseases. Therefore, in the planning of a low vision clinic for these kinds of populations and regions, it would seem appropriate that ophthalmological services be included in the low vision aid clinic service plan. Secondly, the range of ocular pathology seen in the low vision aid clinic has been quite diverse thus far. Therefore, in a low vision aid clinic serving a large proportion of workers form sheltered/protected employment, one should anticipate a wide variety of ocular pathology. Consequently, considerable diagnostic equipment and time must be made available to the low vision aid clinic if this population is to be served properly. The typical referral from this population has been younger and has few to no physical problems other than the ocular pathology. Early clinical data also suggests that approximately 20 percent of the legally blind employees of a protected employment setting can be expected to have progressive ocular diseases. Quarterly eye care follow-ups of these employees are necessary to prevent further loss of vision. Because the low vision aids prescribed for the Ss have been for the use on the job, the aids which have had to be prescribed were those which permitted the employee to be free to use both hands and to sit in a relatively upright or comfortable position while working at the job site. Consequently, the focal length of the aids prescribed for most Ss has been 14 inches. Where a 14 inch focal point could not be gained, a fixed lens was often mounted on the machine where improved vision was critical. Final data is not yet available on the evaluation of the low vision aid in the workplace.

B. R-5: Illumination Level/Color Contrast Studies as Related to Worker Productivity.

Visual performance is affected by many variables. The ability to perceive a stimulus is dependent on both the process of sight (the physiological components of vision), and the characteristics of the visual environment. This interdependence of variables influencing visual performance underlies common practices designed to compensate for losses in visual acuity such as increasing the illumnation, contrast, or size of the stimulus. Likewise, an optical device or a low vision aid (LVA) is employed to enhance the capabilities of the visual system. However, little research to date has investigated the extent to which such strategies actually contribute to the performance and comfort of the low-vision worker.

Previous research indicates that higher levels of illumination can increase workers' productivity and comfort in a variety of industries and occupations, although the extent of increase has not always been large. Studies also indicate that visually impaired persons generally benefit even more from increases in illumination than sighted persons. Furthermore, there is greater variability in lighting levels chosen by visually impaired persons that others.

The use of color or hue contrast to aid visual function has received less attention. However, studies do indicate that the degree of color/hue contrast does affect performance, and that what constitutes an optimum color/hue contrast varies with the individual and the task characteristics.

While low-vision aids have been developed to increase specific components of visual functioning such as acuity and size of the visual field, little research has been done to date on the effect of low-vision aids on the productivity or comfort of the worker. Since most aids have rather specific and limited effects on visual capabilities, it is likely that the effect on working performance will depend on the degree of match between the visual demands of the job and the particular low-vision aid.

1. Relationship of R-5 to Rehabilitation Research and Training Center Research Program.

The focus of the research and training program of the Rehabilitation Research and Training Center on Blindness and Low Vision is the development of strategies which might be used by rehabilitation professionals and consumers to enhance the career development, and hence the employability, of blind and severely visually impaired persons. The development of a technique which might assist the severely visually impaired person to make better use of residual visual functioning on-the-job is one career development enhancement strategy under investigation by the Research and Training Center. The technique under investigation in this project is the effect of changes in illumination levels and color contrast on the productivity of severely visually impaired workers who may or may not use low vision aids. If increases can be made in a worker's visual functioning through low vision aids and work environment modification, then it may be anticipated that this is a strategy which might be used by consumers and professionals to enhance the employability and career development of severely visually impaired people.

2. Project objectives.

This research project was guided by several specific objectives:

a) to develop strategies for testing and identifying optimum illumination levels and color contrast for severely visually impaired persons,

b) to gain some indication of the type and degree of variation among the identified optimum conditions across individuals,

c) to develop strategies for modifying work sites to incorporate such environmental enhancers in a visually meaningful manner,

d) to determine the impact of work site modifications on the productivity and comfort of these workers,

e) to determine the impact of low vision aids on the productivity and comfort of these workers, and

f) to establish the contribution of low vision aids to the efficacy of environmental modifications.

Those objectives which are directly testable form the basic hypotheses of the study.

3. Limitations.

The study was restricted to a sheltered workshop setting in order to satisfy the methodological requirement of obtaining several low vision workers in the same environment. While this restriction serves to increase the internal validity of the study, it also restricts the extent to which the findings can be generalized. The subjects participating in the study tend to be atypical of visually impaired clients in general; thus, caution should be taken with respect to generalizing the findings to the "average" visually impaired person. Atypical characteristics include:

a) Subjects were employed in an atypical workshop; the work setting used falls somewhere between typical sheltered work and competitive employment.

b) Subjects tended to be younger than the average client, to have congenital or early-onset eye conditions, and to have multiple eye pathologies.

c) The sample of subjects was restricted to those diagnosed as legally blind.

Other restrictions made necessary by practical and methodological consideration within the study include the following:

a) The bulk of the participating subjects fell into one category of occupational tasks. The study was necessarily limited to those specific jobs with one workshop which could be modified to incorporate both the illumination and color contrast variables.

b) Of those subjects receiving LVA's, almost all received some type of eyeglasses with a high refraction. This occured because ot the need to prescribe an aid which subjects could use on the job, leaving both hands free to work, etc.

4. Summary of Research and Findings.

Low-vision subjects (N=13), several of whom received Low-Vison Aids for the first time, were tested with respect to various illumination levels and color contrast conditions to ascertain whether specific levels of these variables could facilitate visual acuity. An optimum level of lighting and color contrast was identified for each subject. Results of preliminary testing indicated that for at least some individuals, specific lighting conditions and color contrasts were related to better performance, but there were considerable individual differences in terms of what constituted optimum conditions for each subject, and to what degree optimum conditions facilitated visual performance.

The job-site of each subject was modified in accordance with that subject's optimum illumination and color conditions. The subjects, most of whom were employed in industrial sewing jobs, as sewing machine operators, received each modification separately and in combination, in a prearranged sequence. Before and after each modification (or treatment) phase, the modifications were withdrawn, resulting in non-treatment phases alternating with treatment phases. The design was an A-B-A-C-A-D-A single-subject, withdrawal design, with a representing non-treatment phases and B, C & D representing light only, color-only,

and color-plus-light modification phases, respectively. The dependent measure was productivity rates.

There was considerable variability among the subjects. Some subjects exhibited higher production rates related to one or more of the modifications, while others did not. Of those who did, better performance was related to the light modifications and not to color modifications. In general, production rates were highly variable, suggesting a considerable influence by other uncontrolled extraneous and within-subject variables (for example, motivation). Baseline data taken before and after the receipt of LVA's indicated increased performance for several of those subjects using LVA's.

After productivity data collection, subjects were asked to respond to comfort questionnaires designed to ascertain their attitudes concerning LVA's and/or color and light modifications. The majority of subjects were favorable with respect to all modifications. However, the percentage of favorable responses to each type of modification indicated greatest favorability (i.e. most beneficial) to the LVA, next to the light modification, and least to the color modification. Discussion of results includes implications for intervention strategies for the visually impaired worker.

Policy, Program, and Practice. The difficulties of field research are well-known. Studies of this nature are complicated by the many factors beyond the researcher's control. The result of such complications is that while the issues may be particularly germane (based as they are on real-world situations), conclusions often must remain somewhat tentative, since the lack of experimental control does not allow for the complete elimination of alternative explanations for the findings. Many of these suggestions may appear obvious to practitioners in the field, but have gained corroboration through the results of this study. Further research is necessary to strengthen the conclusiveness of field research findings. With this qualifier in mind, the following strategies are recommended with respect to performance enhancement through environmental modifications:

a) Individualized testing should be done. Low-vision individuals differ widely in terms of what type modifications are beneficial, and the extent to which they may benefit.

b) Frequent retesting is appropriate for individual's with progressive eye conditions. As changes occur in a person's acuity and field characteristics, it is to be expected that visual needs will change as well.

c) Testing for optimum environmental enhancers should be job-specific. Visual needs are somewhat task-specific, depending on the individual's work strategies, experience with the task, and the nature of the task. An identified "optimum" for one particular task, e.g., an acuity test, will not necessarily benefit the individual in doing many other tasks or activities. The testing should incorporate as many components, i.e., visual demand characteristics, as possible. There exists the need for a standard protocol to assess the visual demands of specific jobs.

d) Specific environmental modifications should be strategically devised and refined. Knowledge of optimum conditions for an individual is worthless if attempts to modify his/her environment fall short of incorporating those characteristics in a visually meaningful way. This is an especially critical point to make regarding such stimulus characteristics as color contrast, which are not so easily incorporated into some job tasks. Job analysis and visual demand assessments can help to identify what environmental characteristics that both a) modifiable, and b) visually meaningful.

e) Where feasible, flexible modifications should be incorporated. A good example of this strategy applied to illumination is the use of rheostatically controlled lighting which an employee can adjust according to need. An example of flexible contrast capabilities is the computer terminal which allows for the selection of figure and background colors. It is important to remember that the conditions which are optimum for a task of limited duration are not necessarily always beneficial. While a very high level of illumination may increase visual function for specific tasks, that same level may result in eye strain or glare discomfort if used for long hours at a time. It is also likely that an individual's visual needs may change according to various internal states and external conditions. Thus, modifications which themselves can be modified are likely to be the most efficient.

Problems encountered in the present study should help to guide subsequent research efforts in this area. Definitive answers for many of the issues must await more controlled study, in which such variables as worker motivation, plant production standards and practices, job familiarity and work conditions cannot have an influence. The first recommendation, therefore, is that further attempts to study the incorporation of environmental modifications into job-sites be postponed until some of the basic issues concerning the effects of environmental cues on visual and psychomotor functioning have been clarified. The following strategies would be useful in clarifying such issues:

a) Contrast should be studied in terms of its individual components: chromatic contrast and luminance contrast. As separate variables they may have very different effects on visual performance. Furthermore, subsequent studies should incorporate a greater range of contrast ratios than were possible in the present study. If a real contrast effect is relatively small in magnitude, the manipulation of that variable to which this study was limited would simply be inadequate for producing such an effect.

b) The use of Low Vision Aids should be manipulated as a within-subject variable, completely independent of environmental modification variables.

c) Short-term testing of each subject (extended over a few hours, rather than months) should maintain subject characteristics such as motivation, experience with task, and extent of visual function at a more

constant level. Evaluation measures should be tied more closely to specific types of performance, rather than to general measures such as productivity with all their inherent confounds.

d) Tasks on which dependent measures are obtained should be completely novel to the subject, to minimize the effects of experience. In the present study it was unclear to what extent subjects actually depended on vision to do their jobs. Repetitive tasks of the sort described in this study lend themselves to a variety of strategies which reduce one's dependence on vision.

e) Multiple tasks should be used which use a variety of psychomotor and visual skills to determine the consistency of the effects of environmental characteristics across tasks. The present study provided some indication that the magnitude of the effects was somewhat task dependent. Tasks which differ in terms of specific visual demands (e.g., central acuity vs. peripheral field vision) would not be expected to benefit equally from the incorporation of environmental modifications.

f) Environmental characteristics which need to be studied, both independently and interactionally include stimulus size, type of illumination, amount of illumination, luminance contrast, chromatic contrasts, and speed of presentation.

Subsequent attempts to study the effects of envirnomental modifications within the worksite should consider the following issues:

a) The visual demands of individual tasks need to be better understood so that environmental modifications can be strategically planned and incorporated.

b) The effects of environmental cues on initial job training should be investigated.

c) Dependent measures less subject to the many confounds complicating such measures as general productivity need to be devised and tested.

d) Problems encountered.

The primary delay in R-5 Task 2 was created by the low number of appropriate subjects with illumination and color contrast modifiable jobs generated by R-1. Because the majority of clients seen in R-1 were not appropriate as LVA Ss in R-5 (i.e., inappropriate jobs, no prescription would improve vision and permit use of both hands on the job, etc.), fewer Ss were available for the R-5, and those that were available were produced at a slower rate than anticipated.

The delays in R-5 Task 4, 5, and 9 are related. After the principal investigator completed the first draft of the technical report, it was mailed to experts in low vision and rehabilitation. While a few persons responded promptly to the request for comments on the draft, a number of persons requested additional time which delayed the revision, editing, and retyping, and distribution. After the revisions were made, the manuscript corrections were delayed

because of demands on clerical time due to the grant application deadline date.

Tasks 6 and 7 were deferred until an appropriate training activity could be planned and conducted. The RTC sponsored Research Utilization Conference was selected as an appropriate forum for training on the products of R-5.

C. R-4: Statement of Functional Outcome for Blind/Severely Visually Impaired Clients of State Rehabilitation Agencies.

There have been relatively few studies attempting to predict rehabilitation outcome with blind and legally blind clients. The majority of previous studies with this client population have been descriptive of the personal characteristics of the successful rehabilitants. Other studies dealt with a segment of the blind population, such as war blinded, or predicted non-vocational outcomes such as adjustment to blindness or ability for independent living.

This present study was designed to assist state agencies for the blind identify those client characteristics and services which are associated with specific functional employment outcome levels. The project was designed to achieve the following general objectives:

1) To identify those factors associated with the rehabilitation service delivery system process that relate to specific rehabilitation outcome. Such factors include which services received, amount of expenditures for services received, and amount of time spent in various stages of the rehabilitation process
2) To identify those factors or characteristics of the client, including those related to disability and to personal/biographical characteristics, that relate to specific rehabilitation outcome
3) To identify those factors related to the financial status of the client, including receipt of "transfer payments" that relate to functional outcome
4) To identify those factors related to the occupational history of the client that are correlated with outcome
5) To identify variables related to the counselor, including education and special training, that may help predict outcome
6) To identify geographic factors, such as proximity of services, that may relate to functional outcome.

The information sought by this investigation is designed to help identify blind or severely visually impaired clients whose optimal functional employment level is incompatible with the mission of the agency. It is also designed to identify clients and the unique combination of services they need to maximally benefit from rehabilitation services.

This study also attempted to overcome omissions and methodological problems of previous research, including the tendency to view outcome in an imprecise, "successful" vs. "unsuccessful" classification; the problem of limited generalizability from use of restricted samples; and the problem that data, usually from standard forms entered on computer tapes, could not be checked for accuracy. The data, which was collected on a large, diverse sample of blind clients, provided results which can assist state agencies in identifying services and allocating resources to maximize rehabilitation outcomes and provide a data base from which future research questions may be addressed.

The RSA Manual provides nine different codes for Work Status at Closure on the R-300 form. Given the extremes of outcome classification, the

"two-category" successful ("26") vs. unsuccessful ("28") approach and the 22 categories provided by Dunn (1975), a decision was made to establish a four-category classification for rehabilitation outcomes which is based largely on economic grounds. A new variable, Work Status Wage Earner Category, was created. The four work status categories were Wage Earner 1 (WE-1), Wage Earner 2 (WE-2), Non-Wage Earner 1 (NW-1), and Non-Wage Earner 2 (NW-2). These outcome categories were coded 1 through 4 so that this variable could be analyzed quantitatively.

The WE-1 group consisted of those outcome categories for which income was generally sufficient for independent living. The outcome categories for the WE-1 group were: competitive labor market, self-employed (except BEP), and state agency managed Business Enterprise Program. The WE-2 group were earning substantially less than the competitive group and were employed in protected work settings. The WE-2 group outcome categories were sheltered workshop and homebound industry. The NW-1 group outcome categories were homemaker and unpaid family worker. The NW-2 group consisted of status 28 closures with outcome categories not working - student, not working - other, and trainee or worker (non-competitive labor market).

Data analyses

Step-wise multiple regression analysis was employed to provide a measure of the relationship between the set of predictor variables and the outcome criterion variable. Step-wise multiple discriminate analysis was employed to identify specific variables which tend to discriminate or help classify cases into outcome categories using the information in the independent variable list.

Multiple regression analysis. Results from the multiple regression analysis indicated a significant relationship between the dependent variable, Work Status Wage Earner Category (R46B) and the set of 39 predictor variables. The multiple R=.56 and R-squared=.314 indicating approximately 31% of the variance in R46B can be accounted for by the predictor variable set. The R-squared value adjusted for degrees of freedom was .27 indicating 27% common variance. Accounting for approximately 30% of the variance in outcome suggests a modest relationship between predictor variables and outcome.

Discriminate analysis. Multiple discriminate analysis was the primary statistical technique used to explore the relationships among the variables in this study. The results of the discriminate analysis yielded an eigenvalue and a set of coefficients for each discriminate function. The eigenvalues, usually symbolized by the Greek letter lambda, will all be positive or zero, and can be interpreted as a relative measure of the discriminating power of the function it is associated with. The larger the lambda, the more the separation of the groups on that function. An eigenvalue may be quite small and be statistically significant, but not be substantively important. The eigenvalues for canonical function 1 indicates that 44% of the variance is accounted for by the groups and amounts to a moderate amount of discriminatory power for the first function. Functions 2 (22.5%) and 3 (12.7%) have substantially less discriminatory power.

The procedure for testing the functions for significance involves examining the discriminating ability in the set of variables prior to deriving the function. After deriving one function, the remaining residual discrimination is

available for extraction by subsequent functions. If the remaining discrimination is too small, it may be useless to derive any more functions even though they can be calculated. The statistic used to measure discrimination is Wilk's lambda or the U statistic. A lambda close to 1.0 indicates very little discrimination while a value near zero indicates high discrimination. In Table 2, the first row shows a lambda value of .379, indicating that there is significant discrimination in the set of variables before derivation of any discriminate functions and that the first function will be significant by the Chi-squared test statistic. After derivation of the first function, the remaining discrimination (lambda=.667) is also significant as is the subsequent remaining discrimination for function 3 although the lambda value of .873 indicates that the function is weak.

Table 2

Summary of discriminant functions

Function	EIGEN Value	Canonical Correlation	After Function	Wilks Lambda	df	Chi Square
-	-	-	0	.379	93	576.4*
1	.786	.663	1	.667	60	231.8*
2	.289	.474	2	.873	29	80.8*
3	.146	.356	-	-	-	-

*p<.0001

Because this study is an exploratory search for potentially discriminating variables, some of the variables entered into the equation were weak discriminators as well as correlated, thereby, having redundant discriminatory information. Stepwise discriminant analyses addresses this problem. In the stepwise selection the first variable "entered" into the equation is the single best discriminating variable. The order of entry of the variables can be assumed to reflect the order of importance of the variables in the discrimination process. Table 2 shows the order of variables selected for entry into the stepwise discriminant equation and the associated Wilk's lambda value for the collection of variables entered up to the tenth step.

Table 3

Summary of discriminating variables

Step	Action entered	Action removed	Vars in	Wilks' lambda	Sig.	Label
1	R7		1	.763661	.0000	Age at referral
2	C11		2	.675242	.0000	Occup goal TVQ (1st IWRP)
3	R9A		3	.642892	.0000	Sex
4	YDPR		4	.612313	.0000	Years disabled prior to referral
5	NDIS		5	.591764	.0000	Number of additional disabilities
6	R26		6	.573159	.0000	Highest grade completed
7	R64		7	.557960	.0000	On the job training
8	C26A		8	.543465	.0000	Proximity to counselor
9	R27B		9	.531665	.0000	Wage category at referral
10	R60A		11	.484541	.0000	Received institutional training

Classification of cases

A major reason for employing discriminate analysis is the technique can provide information regarding classification of cases into outcome groups using the discriminating variables. The classification results are summarized in Table 4. The last line in this table shows that approximately 60% of the cases were correctly classified by the discriminating variables. Given 25% correct classification expected by chance, 60 percent represents an improvement over chance of 240 percent.

Table 4

Classification results

Actual group	No. of cases	Predicted group membership 1	2	3	4
Group 1 Wage earner-1	207	131 63.3%	29 14.0%	24 11.6%	23 11.1%
Group 2 Wage earner-2	60	5 8.3%	33 55.0%	9 15.0%	13 21.7%
Group 3 Non wage earner-1	206	9 4.4%	20 9.7%	148 71.8%	29 14.1%
Group 4 Non wage earner-2	140	23 16.4%	28 20.0%	31 22.1%	58 41.4%

Percent of "grouped" cases correctly classified: 60.36%

Classification processing summary

619 cases were processed.
6 cases had at least one missing discriminating variable.
613 cases were used for printed output.

Examining the first row of the table indicates that of the 207 cases actually closed in WE-1 (group 1), 63.3% were predicted for group 1 and the percentages of incorrect classification in the other goups were given in the remainder of the row. There was 55.0%, 71.8%, and 41.4% correct classification for groups 2, 3, and 4 respectively.

Data analyses planned through July, 1984 include descriptive statistical analyses of the predictor variables associated with each of the wage earner categories, an analyses of the data on a state basis for each state participating in the study, and a second set of discriminant analyses with additional variables to determine if the prediction rate can be improved. The current data analyses consists primarily of multivariate statistical analyses which may be less useful to the RTC/B-LV than descriptive analyses of the data. Consequently, a descriptive report shall be generated to accompany the multivariate data analyses.

An analysis of each state's data is in process as well. The RTC/B-LV agreed to provide each state a report for permitting the RTC/B-LV access to the state's records/cases. Provision of this information should assist the state on ways to identify those clients who might be closed as "28" without additional services.

Policy, Program, and Practice Changes. Resource allocation decisions emerge daily in state rehabilitation agencies for the blind. These agencies generally have fewer resources than the general agencies, fewer case service dollars, and clients which are more expensive to rehabilitate (average cost per rehabilitant in 1974 = general agencies, $2,258; agencies for the blind, $5,012 - Sect. 110 expenditures, RSA, 1974). Therefore, it is essential that these agencies be given information which will assist them in planning cost-effective services for clients, i.e. using those resources and allotting to those resources which can be associated with specific functional employment level outcome. The present study is designed to examine the contribution of specific CDIS services, e.g. employment support services, to the funcitonal outcome of the rehabilitation process for the blind/severely visually impaired client. The primary change anticipated as a result of this project is change in agency practice. The efficiency and effectiveness of rehabilitation agencies in serving legally blind clients will be enhanced as a result of this project.

D. R-3: Development of Electromechanical Vocational Assessment Technology for Finger Dexterity and Hand/Foot Coordination.

In January, 1983, an annotated bibliography entitled, Career Development of Blind and Visually Impaired Persons, was published by the RTC/B-LV as a result of the work on the R-3 project. Because of the RTC/B-LV's focus on enhancing employment of blind and visually impaired persons, career development was chosen as an underlying framework for career services. The linkage of this theoretical framework and a delineation of career services is the Center's Career Development Intervention Strategy (CDIS) model. The model outlines ways that career services can be used to enhance an individual's career development. The literature search from which this CDIS bibliography was produced was conducted in order to further specify the CDIS model, to identify CDIS services currently in use, and to assist in the identification of research needs in the field. The bibliography is organized around the following: adjustment training, personal/social interactive capability training, client vocational/educational training, employment support services, attitudinal barriers, and rehabilitation professional education needs. A unit or career development literature is included also. It is notable that no literature could be found addressing issues on the identification and referral of persons with visual impairments for career development services.

The RTC surveyed the career development needs of blind and severely visually impaired children and adults. To assess the perceptions of the career development needs of this population, parents, teachers, and rehabilitation counselors were surveyed. Private and public rehabilitation agencies were also asked about the career development needs of this population as well as asked about the resources available to meet the needs of their clientele.

The Career Development Needs and Resources Survey utilized was adapted from the Wisconsin Career Education Needs Assessment and Survey of Resources Handbook. The adapted instrument assessed self-understanding, understanding of the world of work, career exploration, decision making, career preparation and placement skills, and the adequacy of the career development delivery system. Surveyed by instruments developed by each population were early childhood educators (N=30), third grade students (N=57), sixth grade students (N=46), ninth grade students (N=52), twelfth grade students (N=50), teachers (N=170), parents (N=165), rehabilitation counselors (N=167), adults (N=146), and private and public rehabilitation agencies (N=53).

From an initial and preliminary analysis of portions of the data collected for the R-3/CDIS project, the following conclusions seem warranted. It must be noted, however, that the conclusions are tentative and subject to revision on further analyses and study of the data.

Career development activities in schools and rehabilitation agencies and centers serving blind and visually impaired persons appear to be providing to the clientele of these schools, centers, and agencies with less frequency than the providers or consumers of the career development services state feel is needed. Thurman (1983) state that among the consequences of this state of affairs is continued high rates of underemployment and unemployment among blind and visually impaired people. In the present study is included an examination of how providers and consumers of career development services for blind and visually impaired persons perceive the need, importance, or value of the career development service and how available the service is to consumers.

The need for self-understanding or self-awareness was included in the survey forms for each of the grade levels (3,6,9,12) because through self-understanding, which is knowing what kind of a person he or she is and hope to become, one can become involved in the critical sequential process of self-evaluation upon which career choices are made. The extent of this need was expressed at its highest level in grades 3 and 6. It was met by the schools at about the same frequency in grades 6, 9, and 12. Teachers, both kindergarten and grades 3-12, perceived these needs as among the most important career development needs surveyed. They reported also that their circumstances permitted them to meet these needs at a rate slightly higher than the students perceived the need being met.

Understanding the world of work is a career development need included in the survey forms for each grade level. The concepts about the world of work to be understood by the blind and visually impaired child differ with each of the age groups. For example, grade 3 blind and visually impaired children may be expected to have an awareness of the activities required by some jobs; whereas, students in grade 12 should have an understanding of the skills required by some careers, the associated lifestyles, working conditions, and the level of training and education required. The younger children (grades 3 and 6) appeared to express greater need for understanding the world of work activities than did the students in grades 9 and 12. The younger group also reported the schools to be meeting these needs at a more frequent rate than the older students. The teacher group reported this need to be of medium importance, but not quite as important as the need for self-understanding. Kindergarten teachers reported meeting this need frequently while teachers (3-12) reported it to be met only slightly better than occasionally. The difference in meeting the need between the teacher groups likely reflects the differences between the activities described for the two groups. Of more critical concern is why teachers (3-12) would place less value on these activities than the kindergarten teachers. Teachers (3-12) may place lesser value on these activities because of less experience and knowledge in this area. Thurman (1983) has suggested that the lack of incorporation of career development activities into the total curriculum for blind and visually impaired students occurs because teachers are not knowledgeable in this area. The teachers state that their professional education needs for skills and understanding of the career development needs of blind and visually impaired children are being met only occasionally.

Career exploration, decision making, and planning needs were reported in ways which appear to be contrary (subject to revision on further analysis) to career

development theory of non-special needs populations. This finding supports Phillips' et al (1983) contention that it may not be appropriate to apply theories based on non-special needs population to special needs populations. The highest level of career exploration needs expressed by the blind and visually impaired students surveyed were found with the sixth graders followed by the ninth graders and then the twelfth graders. The sixth graders also reported these needs being met by the school less often than either ninth or twelfth graders. Teachers (3-12) evaluate this need in the medium high range and report it to be met only occasionally by the schools. Significantly, those items involving try-outs in work settings were perceived as being met even less frequently than occasionally. Information about work experience programs for blind and visually impaired children has been available to the field since the early 1970's (e.g. Tremble and Campbell, 1973; Huber, 1973; Lawrence, 1973).

Career preparation and placement needs were perceived by ninth graders as a higher order need than the twelfth graders perceived them. Both groups reported the need being met at approximately the same rate, i.e., more frequently than occasionally, but less often than frequently. Teachers (3-12) perceived the need to be slightly more important than did either group of students and to be met less frequently than did the students.

From an initial and preliminary analysis of portions of the data collected for the CDIS project, the following conclusions seem warranted. It must be noted, however, that the conclusions are tentative and subject to revision on further analyses and study of the data.

1. The career development needs of blind and visually impaired youth appear to be needs which are of relative high intensity.

2. The career development needs of blind and visually impaired youth appear to be met only occasionally by the schools.

3. As the career development service needs became more occupationally specific, the students expressed higher levels of need and lower rates of receiving the services.

4. Provider groups differed in the perceived importance of the career development needs of blind and visually impaired persons.

5. The provider groups agreed that the need for career development services among blind and visually impaired persons exceeded the availability of and frequency with which the services were generally provided to this population.

6. The needs of providers for career services which facilitate the career development of blind and visually impaired people exceeds the availability of the services.

7. As the needs of providers for career services to be used with their clientele became more occupationally specific, the need for the service increased, and the frequency or accessibility of the career service decreased.

Policy, Program, and Practice Changes. The preliminary data analyses point to the need for introducing more occupationally relevant information in curriculum for consumers and providers of educational services to blind and visually impaired children. Efforts to meet the transition needs of these children can be met by rehabilitation and educational services providers developing procedures to introduce occupationally relevant material into the curriculum. Providers and consumers expressed considerable need to understand about and know of jobs which were performed by blind persons. The lack of this kind of information impedes the efforts of teachers and rehabilitation counselors to develop I.E.P.'s and I.W.R.P.'s with the blind person or, in the care of children, the parent who may assist the blind person make the transition from the school into the workplace.

SIGNIFICANT UTILIZATION OF FINDINGS

A. Utilization of Past Completed Research of RTC/B-LV.

Center research activities has produced a number of products which are in use in the field of blindness and low vision. While only one project, R-5: Illumination Level/Color Contrast Studies as Related to Worker Productivity, has been completed, other projects such as R-6: Development of Electromechanical Vocational Assessment Technology for Finger Dexterity and Hand/Foot Coordination, have generated materials or products used in the field.

From R-3: Assessment of Current Career Development Intervention Services and Needs of the Blind/Severely Visually Impaired Individual, an annotated bibliography entitled Career Development of Blind and Visually Impaired Persons: An Annotated Bibliography has been developed. The bibliography is used as a text in the Rehabilitation Services Administration funded master's degree program for vocational specialist for visually impaired persons at Mississippi State University. It has also been purchased by a number of libraries, rehabilitation counselor education programs, and agencies. From the R-3 research, numerous presentations have been made. It also served as the basis for the papers presented in the 1983 MacFarland Seminar of the American Association of Workers for the Blind.

In R-6: Development of Electromechanical Vocational Assessment Technology for Finger Dexterity and Hand/Foot Coordination, it was necessary to develop manuals for the evaluation of the electromechanical vocational assessment technology (EVAT). These manuals have been distributed for use in facilities using the EVAT in the assessment of multiply handicapped blind persons. Additionally, the manuals have been used in a number of training programs for vocational evaluators sponsored by the RT-30. The Helen Keller National Center on Deaf-Blindness will be using the EVAT and manuals in its vocational evaluation program.

R-6: Development of Electromechanical Vocational Assessment Technology for Finger Dexterity and Hand/Foot Coordination, preliminary results have also been used to serve as the instrumentation for R-8: Prevocational Work Ability and Success Acquisition Training of Deaf-Blind and Other Multiply Handicapped Visually Impaired Individuals.

In R-5: Illumination Level/Color Contrast Studies as Related to Worker Productivity, the Center's recently completed project, the use of the research product, the evaluation of a technique to identify optimal illumination and color contrast conditions, has been chiefly heuristic. R-9: Assessment of Visual and Psychomoter Performance as a Function of Varying Stimulus Conditions, has been based in the main on the research findings of R-5. Additionally, the R-5 product has been used in training conferences sponsored by the RTC/B-LV.

In summary, the research activities of the RTC/B-LV have produced products which are used in the training of rehabilitation professionals and the vocational evaluation of multiply handicapped blind and visually impaired person as well as people who are deaf and blind and have generated additional research studies addressing the career development needs of blind and visually impaired persons.

B. Utilization of Knowledge Generated by Other R & T Centers.

In 1983-1984, the RTC/B-LV has used the Training Evaluation Kit (TEK) developed by the University of Oregon RTC as an instrument in the evaluation of

training. Additionally, in R-6: Development of Electromechanical Vocational Assessment Technology, the procedures for formating work samples manuals recommended by the University of Wisconsin-Stout RTC have been followed in the development of R-6 manuals. Literature on rehabilitation outcome developed by the West Virginia RTC has been used extensively in R-4: Functional Outcome. R-7: Modification of the VERT has used research findings of the University of Wisconsin-Stout RTC in the development of work samples for professional, semi-professional, and skilled jobs.

NARRATIVE SUMMARY OF RESEARCH UTILIZATION ACTIVITIES

I. Significant Training

Since March of 1983 eighteen training programs have been conducted. During this period the nature of these programs has changed slightly. More short-term training programs have been offered on the MSU Campus (T-36, T-38). These programs have a well integrated curriculum and a strong set of goals and objectives. Many earlier training programs were very short. Time was devoted to research findings and trainees were given little help in how to share information or use it in specialized ways. These two issues were addressed in the training provided at MSU. The RTC is committed to continuing to offer courses at the Center. Such on-site programming allows greater program flexibility and better utilization of a greater number of staff persons and highly qualified university personnel.

These on campus programs were able to meet national training needs within the blindness field. The trainees who traveled to MSU were from 13 states representing 5 federal regions and were both rehabilitation and education professionals. This is an even greater accomplishment when it is realized that one program was advertised only regionally.

The Center has continued its commitment to providing training for state vocational rehabilitation agencies. The career development focus of the Center provides an excellent theme for bringing together education and rehabilitation professionals within the training context. The Center has also worked very hard to work cooperatively on training programs. Since March 1983 the Center has worked cooperatively with the following organizations and training programs: University of Tennessee, Regional Rehabilitation Continuing Education Program (T-28); University of Alabama in Birmingham, Medical Rehabilitation Research and Training Center (T-28); Veterans Administration, Southeastern Blind Rehabilitation Center (T-28); Helen Keller National Center for Deaf-Blind Youths and Adults, Atlanta Office (T-36); Auburn University, Rehabilitation Facility Continuing Education Program (T-31, T-37); and The American Foundation for the Blind (T-27, T-38). The Center will continue to work cooperatively with other organizations and training programs.

Even though the Center's training program has grown steadily, the third year of operation has been somewhat of a transition year. The Center is moving toward more integrated programs with greater lasting effects. Although RTC staff still serve as trainers in programs sponsored by other organizations the training emphasis is shifting to programs sponsored or co-sponsored by the Center. The Center will also continue its commitment to the provision of a variety of types of pre-service training. The Center will also continue to work with state vocational rehabilitation agencies to provide specialized in-service training.

II. University Curriculum

The Center's activity in the area of pre-service training has also increased. Since March of 1983 four University courses have been taught by Center staff in cooperation with MSU's Department of Counselor Education, Rehabilitation Counseling Program. Three of these courses were taught in conjunction with the Special Rehabilitation Services Administration Funded Vocational Specialist for the Visually Impaired Training Program. Center staff have worked closely with Vocational Specialist program in planning overall curriculum and program focus.

The Center has also provided a resource to the vocational specialist program as a site for internships and practicums. During the past year students from other programs have also completed internships with the Center. For those students from non-rehabilitation oriented fields, such as industrial psychology, the Center provides unique opportunities to gain specialized knowledge that may lead to future rehabilitation related work.

Related pre-service training activities include two Doctoral Dissertations and one Master's Thesis completed utilizing Center data basis. Medical residents at the University of Mississippi Medical Center also work with the Center sponsored Low Vision Aid Clinic. Such a residency helps increase Ophthalmologists sensitivity to low vision concerns and broadens the usual focus on surgical procedures.

III. Significant Materials Developed

The development of materials for direct distribution to practitioners or to enhance the training and dissemination program provides a concreteness and lasting feature to the Center's work. Materials development goes beyond the publication of technical research reports and the production of training aids. As in any research effort there are valuable by-products which can be utilized in the field or in the development of further research. For example, the Center's first publication Career Development of Blind and Visually Impaired Persons: An Annotated Bibliography was the result of an extensive literature review conducted as part of the research project "Assessment of Current Career Development Intervention Services and Needs of the Blind and Severely Visually Impaired Individual." This document has already proven to be highly useful to researchers and students. Likewise the Electromechanical Vocational Assessment Manuals developed in order to collect consistent data for the project titled "Development of Electromechanical Vocational Assessment Technology for Finger Dexterity and Hand-foot Coordination," has proven to be indispensible to vocational evaluators using the National Industries for the Blind Electromechanical Work Task Units.

An example of materials developed by the Center from training activities is the proceedings of the 1983 MacFarland Seminar published in 1984 and the proceedings of the first Research Utilization Seminar currently in production Audio-Visual materials have also been developed to enhance training and dissemination activities, making them more meaningful for participants.

The Dissertation Review Series, which will begin July first, is a slightly different project. It will provide a much needed review of research in the blindness field.

It is true that the research utilization results of materials development projects are not as easily determined as in training or dissemination projects, but their lasting affect on the blindness field is potentially enormous. They provide lasting documentation of the Center's work that can be used in many ways and within many contexts. The Center is committed to continuing to produce the types of documents described in these reports and to expansion of this activity.

IV. Impact of Information Dissemination

One of the ways that the Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision promotes utilization of its research products is through its dissemination projects. These projects are short in duration and focus on information transfer. The types of activities covered include exhibits, demonstrations, presentations, publications, and interviews. The Center's newsletter, Worksight, and consumer and community education activities are also considered dissemination projects. During fiscal years 1982-83 and 1983-84, 84,849 persons were contacted through Center dissemination projects.

Each dissemination activity has goals and objectives. Often the most direct objective is to provide information. During the Center's first two years of operation dissemination efforts focused on providing general information about the Center and its research and training activities. During the third year of operation these projects have moved more toward providing information about specific research projects. Increasingly research results and their application to service delivery form the content of dissemination projects.

While the Center's contact with professionals has remained constant, a significant increase has occured in its contact with consumers and the general public. Center staff often find themselves involved in activities that increase public awareness of the capabilities of blind and severely visually impaired people.

While dissemination activities may not have the same long term effect as training programs involving skill acquisition, they set the stage for fuller benefit from later training. They also bring the Center staff into contact with a large number of professionals. Many of these professionals eventually obtain benefits from the Center's training program.

As in the training program cooperative efforts are also sought for dissemination projects. During this reporting period the Center worked with the University of Wisconsin-Stout Vocational Rehabilitation Institute, the National Council of State Agencies for the Blind, and various consumer and professional organizations in the blindness field.

Dissemination projects are an important part of the Center's research utilization effort. Information is a powerful tool and equally as important as skill in the delivery of services to blind and severely visually impaired people.

SUMMARY OF COMPLETED TRAINING PROJECTS

I. Continuing Education

11 Courses Conducted — 781 Individuals Trained

No.	Title	Trainees No.	Trainees Type	Course Hours
T-21	Rehabilitation Research and Its Application to Enhancement of Employment of Blind and Visually Impaired Persons	35	American Foundation for the Blind Exec. and Field Staff	4
T-23	Keys to Success: The Deaf-Blind Person "Electromechanical Work Task Units and the Vocational Assessment and Training of Severely Multiply Handicapped Visually Impaired Persons"	159	Rehabilitation Prof. Special Educators Managers of Sheltered Industry University Educators Vocational Evaluators Federal Officials Deaf-Blind Specialists Students Consumers	1 1/2
T-25	Functional Outcomes of the VR Process for Blind and Visually Impaired Persons	35	Rehabilitation Admin. University Educators RRCEP Staff VR Agency Training Officers Representatives of RSA RTC Training Staff	1 1/2
T-26	Assessment of Current Career Development Intervention Services and Needs of Blind and Severely Visually Impaired Persons	18	Rehabilitation Counselors Vocational Evaluators	2
T-27	Career Development of Blind and Visually Impaired Persons - Annual MacFarland Seminar	275	Rehabilitation Admin. & Supervisors Counselors Facility Directors Special Educators Rehab. Researchers Rehab. Teachers Students Vocational Evaluators	8
T-28	Blindness and Low Vision: State-of-the-Art in Medical and Vocational Programming	59	Rehab. Counselors Rehab. Teachers Psychologists Nurses Educators Rehab. Administrators Vocational Evaluators Facility Staff RSA Regional Office Staff AFB Regional Consultant Students Ophthalmologist	20

No.	Title	Trainees No.	Trainees Type	Course Hours
T-30	Issues in Working with the Blind and Visually Impaired - Training for Facility Personnel	20	Rehab. Counselors BEP Counselors O & M Instructors Vocational Evaluator Nurse Psychologist Personal Adjustment Instructor Communications Instructors Administrative Staff	1
T-32	Diabetes/Endocrine Conference "Preventing Blindness in the Diabetic"	60	Medical Doctors Medical Residents Interns Nurses	2
T-36	Placement of Blind and Visually Impaired Persons Through Career Development Interventions	17	Rehab. Counselors & Supervisors Vocational Evaluators O & M Instructors Special Educators Placement Specialist Students	20
T-38	Blindness and Low Vision: Maximizing Employment Through Research	28	Rehab. Counselors & Supervisors Low Vision Specialists Career Development Specialists Educators Consumers Education and Rehab. Administrators Rehabilitation Facility Directors University Educators	20
T-29	Career Development Strategies and the Employment of Blind Persons: Annual Alliance Meeting	75	Rehab. Professionals Education Professionals Deaf-Blind Specialists Sheltered Workshop Managers Counselors Consumers Guidance Counselors	4

II. In-service Training

5 Courses Conducted — 157 Individuals Trained

No.	Title	Trainees No.	Trainees Type	Course Hours
T-22	Rehabilitation and Work Evaluation in an Industrial Setting	15	Vocational Evaluators Rehab. Specialists Industrial Managers	20
T-24	Career Development of Blind and Visually Impaired Persons	35	Rehab. Counselors O & M Instructors Rehab. Teachers Vocational Evaluator Communications Instructor Leisure Time Instructor Rehab. Aids Rehab. Supervisor Educators	12
T-29	Career Development and Vocational Programming	43	Rehab. Administration Rehab. Counselors BEP Counselors Vocational Evaluator Nurse Psychologist Rehabilitation Program Managers - Sheltered Workshops	8
T-35	Florida Division of Blind Services Training Seminar "Functional Outcome of the Vocational Rehabilitation Process for Blind and Legally Blind Clients of the Florida Division of Blind Services	50	Rehab. Administrators, Supervisors, & Counselors	4
T-37	Georgia Department of Vocational Rehabilitation Evaluators' Training	14	Vocational Evaluators	24

III. Pre-service Training

3 Courses Conducted — 22 Individuals Trained

No.	Title	Trainees No.	Trainees Type	Course Hours
T-31	Career Development and Placement of Blind and Visually Impaired Persons	7	Vocational Specialist for the Visually Impaired Students Rehab. Counseling Students	3
T-33	History, Philosophy, and Trends in Rehabilitation	8	Rehab. Counseling Students	3
T-34	Rehabilitation of Blind and Visually Impaired Persons	7	Rehab. Counseling Students Vocational Specialist for the Visually Impaired Students	3

IV. Courses Designed for or Participated in by State Vocational Rehabilitation Agency Personnel

13 Courses Conducted — 506 VR Personnel Trained

Proj. No.	VR Personnel	Total No.	Course Focus
T-23	Rehabilitation Professionals (Admin., Supervisors, & Counselors) Vocational Evaluators Deaf-Blind Specialists	53	Rehabilitation and Education of Deaf-Blind Persons
T-24	Rehabilitation Counselors O & M Instructors Rehabilitation Teachers Vocational Evaluator Communications Instructor Leisure Time Instructor Rehabilitation Aids Rehabilitation Supervisor	31	Career Development and Placement of Blind Persons
T-25	Rehabilitation Administrators VR Agency Training Officers	11	Outcomes of the Vocational Rehabilitation Process
T-26	Rehabilitation Counselors Vocational Evaluators	18	Career Development Service Needs of Blind Persons - Especially Vocational Assessment
T-27	Rehabilitation Administrators & Supervisors Counselors Facility Directors Rehabilitation Teachers Vocational Evaluators	172	Career Development of Blind Persons
T-28	Rehabilitation Counselors Rehabilitation Teachers Psychologists Rehabilitation Administrators Vocational Evaluators	25	Medical and Vocational Programming
T-29	Rehabilitation Administrators & Counselors BEP Counselors Vocational Evaluator N''rse Psychologist	42	Career Development and Vocational Programming

Proj. No.	VR Personnel	Total No.	Course Focus
T-30	Rehabilitation Counselors BEP Counselors O & M Instructors Vocational Evaluator Nurse Psychologist Personal Adjustment Instructor Communications Instructors Facility Administrative Staff	20	Vocational Rehabilitation of Blind Persons
T-35	Rehabilitation Administrators, Supervisors, & Counselors	50	VR Agency Outcomes
T-36	Rehabilitation Counselors & Supervisors Vocational Evaluators Placement Specialist	9	Placement of Blind Persons
T-37	Vocational Evaluators	14	Vocational Assessment of Blind Persons
T-38	Rehabilitation Counselors & Supervisors Low Vision Specialist Career Development Specialist Rehabilitation Administrators Facility Directors	18	Research Utilization
T-39	Rehabilitation Administrators, Supervisors, & Counselors Deaf-Blind Specialist	43	Career Development Strategies

V. Courses Participated in by Other Rehabilitation Professionals or Students

12 Courses Conducted — 202 No. of Trainees

Proj. No.	Rehabilitation Personnel	No. Participating
T-22	Vocational Evaluators Rehabilitation Specialists Industrial Managers	15
T-23	Managers of Sheltered Industry University Educators Federal Officials Students	40
T-25	University Educators RRCEP Staff Representatives of RSA RTC Training Staff	24
T-27	Counselors Facility Directors Rehabilitation Researchers Students Vocational Evaluators	75
T-28	RSA Regional Office Staff Students	10
T-29	Rehabilitation Program Manager-Sheltered Workshop	1
T-31	Students	7
T-33	Students	8
T-34	Students	7
T-36	O & M Instructors Student	3
T-38	University Educators	1
T-39	Sheltered Workshop Managers	5

VI. Courses Participated in by Education and Other Social Service Professionals and Students

9 Courses Conducted — 258 No. of Trainees

Proj. No.	Type of Personnel	No. Participating
T-21	American Foundation of the Blind Executive and Field Staff	35
T-23	Special Educators University Educators	66
T-24	Educator	4
T-27	Special Educators	28
T-28	AFB Regional Consultant Ophthalmologist Educators Nurse	24
T-32	Medical Doctors Medical Residents Interns Nurses	60
T-36	Special Educators	5
T-38	Educational Administrators Educators	9
T-39	Education Professionals Guidance Counselors	27

SUMMARY OF PROPOSED TRAINING PROJECTS

TOTAL PROPOSED COURSES	14	TOTAL NUMBER OF TRAINEES	2130
In-service Training	3	No. of Vocational Rehab. Agency Personnel	1006
Continuing Education	8	No. of Other Rehab. Personnel	566
Pre-service Training	3	No. of Education and Social Service Personnel	558

No.	Title	Trainees No.	Trainees Type	Course Hours
TP-1	Employment and Training Opportunities for Severely Visually Impaired Persons: Annual National Federation of the Blind Conference	1500	Rehab. Professionals Education Professionals Consumers	8
TP-2	MSU Research and Training Center Internships and Practicums	3	Rehab. Counseling Students Psychology Students	variable
TP-3	Low Vision Aid Clinic Residencies for Ophthalmologists	5	Medical Doctors	80
TP-4	Placement Conference	75	Rehab. Administrators	20
TP-5	Electromechanical Vocational Technology Administration and Record Keeping	5	Vocational Evaluators Rehab. Counselor	24
TP-6	Vocational Specialist for the Visually Impaired	10	Students: Counseling, Psychology, Rehabilitation	3
TP-7	State-of-the-Art Conference on Research in Deaf-Blindness	40	Rehab. Researchers University Educators Deaf-Blind Specialists Education Administrators Rehab. Administrators	32
TP-8	Vocational Education Readiness Test: Auto Mechanics	8	Vocational Evaluators Manual Arts Instructors	variable
TP-9	Coordination of Career Development Services for Blind and Visually Impaired Persons Through Education and Rehabilitation	50	Special Educators Rehab. Counselors Students Consumers Parents	20

No.	Title	Trainees No.	Trainees Type	Course Hours
TP-10	Increasing Employment and Employability Through Career Development Intervention Strategies	250	Rehab. Administrators Supervisors, & Counselors Teachers and Education Administrators Sheltered Workshop Managers O & M Instructors Rehab. Teachers Consumers	36
TP-11	Follow-up Training for Vocational Evaluators, Georgia Division of Vocational Rehabilitation	14	Vocational Evaluators	24
TP-12	Maximizing Employment of Blind Persons Through Research: Second Annual Research Utilization Conference	50	Rehab. Administrators & Supervisors Educational Administrators Facility Directors Consumers University Educators	24
TP-13	Current Research and Practice in the Rehabilitation of Blind and Visually Impaired Persons	60	University Educators Staff Development Specialists	16
TP-14	Placement of Blind and Visually Impaired Persons Through Career Development Interventions	60	Rehab. Supervisors & Counselors Vocational Evaluators Special Educators Placement Specialists	24

SUMMARY OF INFORMATION DISSEMINATION ACTIVITIES

No.	Title	Audience No.	Type	Status
D-18	The Effects of Illumination and Color Contrast Modifications on the Productivity and Comfort of Low-Vision Workers	10	Social Science Researchers	Conducted
D-19	Preliminary Findings of Research Related to Functional Outcomes of Vocational Rehabilitation for Blind and Visually Impaired Persons	50	Rehabilitation Administrators	Conducted
D-20	Rehabilitation Research in Blindness and Low Vision Related to Vocational Rehabilitation Outcomes	15	VR Program Evaluators Rehabilitation Administrators Educators	Conducted
D-21	Low Vision Aids	30	Rehabilitation Counselors O & M Instructors Teachers	Conducted
D-22	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision	150	Rehabilitation Counselors, Supervisors, Administrators Educators Rehabilitation Teachers O & M Instructors Sheltered Workshop Personnel Students Consumers	Conducted
D-23	Special Program Report, RT-30	35	Rehabilitation Administrators University Educators State VR Training Officers RSA Staff	Conducted
D-24	Overview and Update of Research and Training Programs for Blind and Visually Impaired Persons	575	Rehabilitation Professionals Educators Consumers	Conducted

No.	Title	Audience No.	Type	Status
D-25	Rehabilitation Research and Training; Implications for Managers of Protected Industries	10	Vocational Evaluators Rehabilitation Administrators Workshop Managers	Conducted
D-26	Review of Rehabilitation Research and Training Center in Blindness and Low Vision for Directors of Rehabilitation Facilities	10	Rehabilitation Facility Directors Sheltered Workshop Managers	Conducted
D-27	Journal Publications	3000	Rehabilitation Professionals Special Educators Vocational Evaluators	Continuing
D-28	Worksight	3000	Rehabilitation Educators, Counselors, Teachers O & M Instructors Educ. & Rehab. Administrators Consumers Ophthalmologist Optometrist Vocational Evaluator Managers of Sheltered Industries Rehabilitation Researchers University Educators	Continuing
D-29	Establishing Entrance Requirements for Vocational Programs in Mississippi	35	Vocational Evaluators	Conducted
D-30	Consumer and Community Education	30200	Consumers General Public	Continuing
D-31	An Overview of the Rehabilitation Research and Training Center: Past and Present Projects	9	Rehabilitation Administrators, Educators Personnel Managers Consumers	Conducted
D-32	Functional Outcome of the Rehabilitation Process of Blind and Legally Blind Clients of Four State Vocational Rehabilitation Agencies	40	Rehabilitation Administrators	Conducted

No.	Title	Audience No.	Type	Status
D-33	Description of the Mississippi State University RTC's Training Program	30	RTC Training Directors RTC Trainers	Conducted
D-34	Predicting Job Performance of the Visually Impaired: Evaluation of a Manual Dexterity Task	45	Industrial Psychologists Researchers Administrators	Conducted
D-35	Implications of the Research Program of the Rehabilitation Research and Training Center for Blind Consumers	27	Consumers	Conducted
D-36	Employment Enhancement Through Utilization of a Low Vision Aid Clinic	20	Ophthalmologists	Conducted
D-37	Vocational Assessment Projects at the Mississippi State University Research and Training Center in Blindness and Low Vision	28	Vocational Evaluators Rehabilitation Administrators Manual Arts Instructors	Conducted
D-38	Accommodating the Needs of Visually Impaired Workers in the Work Environment: Visual Demands Protocol	7	Rehabilitation Counselors, Administrators	Conducted
D-39	Work Samples and Visually Impaired Persons	28	Vocational Evaluators Rehabilitation Administrators Manual Arts Instructors	Conducted
D-40	The Career Development Intervention Strategy: Planning for the Transition from Education to Adult Services for Blind and Visually Impaired Persons	15	Teachers Education Administrators	Conducted
D-41	Diagnosis and Treatment of Eye Diseases that Result in Low Vision	150	Consumers	Conducted
D-42	Research Utilization	40	Rehabilitation Administrators	Conducted
D-43	Outcome of the Vocational Rehabilitation Process for Blind Women in Four State Agencies	40	Rehabilitation Administrators	Conducted

No.	Title	Audience No.	Type	Status
D-44	The Impact of Rehabilitation Services on the Employment Status of Blind Clients in Four Rehabilitation Agencies	20	Rehabilitation Researchers	Conducted
D-45	Mississippi State University Rehabilitation Research and Training Center in Blindness and Low Vision	200	Rehabilitation Counselors, Administrators, Supervisors, Teachers Vocational Evaluators O & M Instructors Special Educators Educational Administrators Librarians	Conducted
D-46	Work, Success, and the Career Development of Blind and Visually Impaired Persons	90	O & M Instructors Rehabilitation Teachers, Administrators, Supervisors, Counselors Eye Care Specialists Educators	Conducted
D-47	Update on Training Activities of the MSU Rehabilitation Research and Training Center	45	Rehabilitation Administrators Staff Development Specialists University Educators RTC Training Staff	Conducted
D-48	Work and Success as They Relate to the Career Development of Blind and Visually Impaired Persons	150	Rehabilitation Professionals, Teachers Educators of the Visually Impaired University Educators Vocational Evaluators Eye Care Specialists	Conducted
D-49	Journal Publications	5000	Rehabilitation Professionals Educators of the Visually Impaired University Educators	Continuing

No.	Title	Audience No.	Type	Status
D-50	Consumer and Community Education	40000	Consumers General Public	Continuing
DP-1	Worksight		Vocational Rehabilitation Professionals Educators of the Visually Impaired O & M Instructors Rehabilitation Teachers Students University Educators Consumers	Continuing
DP-2	Update on New and Continuing RTC Research Activities for Administrators of State Vocational Rehabilitation Agencies		Vocational Rehabilitation Administrators	Proposed
DP-3	Worksight		Vocational Rehabilitation Administrators Educators of the Visually Impaired O & M Instructors Rehabilitation Teachers University Educators Consumers	Continuing
DP-4	Journal Publications		Rehabilitation Professionals, Teachers Educators of the Visually Impaired University Educators Counselors Students Consumers	Continuing
DP-5	Consumer and Community Education		Consumers General Public	Continuing
DP-6	Results of RTC Research Projects for Professionals		Rehabilitation Professionals Educators of the Visually Impaired Eye Care Specialists University Educators	Continuing

No.	Title	Audience No.	Type	Status
DP-7	Dissemination of RTC Materials		Rehabilitation Professionals, Researchers Educators of the Visually Impaired Eye Care Specialists University Educators Consumers Business Managers	Continuing

SUMMARY OF MATERIALS DEVELOPED

No.	Title	Type of Material	Status
MD-1	Career Development of Blind and Visually Impaired Persons: An Annotated Bibliography	Publication	Completed
MD-2	Electromechanical Vocational Assessment Manuals: Fine Finger Dexterity Work Task Unit, Multifunctional Work Task Unit, Hinged Box Work Task Unit, Index Card Work Task Unit, Revolving Table Work Task Unit.	Publication	Completed
MD-3	Computation of Percent Loss of Visual Efficiency	Publication	Discontinued
MD-4	Work Samples and the Visually Impaired: State-of-the-Art Review and Resource Manuals	Publication	Completed
MD-5	Audio-Visual Materials: Samples of Low Vision Aids, Low Vision Aids in the Work Setting, Example of an ISP Training Module, Mississippi Industries for the Blind, Broom Department, ISP Training Facilitator Working with a New Employee, Functional Outcome of the Rehabilitation Process, Functional Outcome of the Rehabilitation Process for Women, Illumination Level and Color Contrast Testing Procedures, Constructing Illumination and Color Testing Materials, Illumination Level and Color Contrast Job Site Modifications, Low Vision Modifications Utilizing Light and Color -- Environmental Cues and Reading and Writing Aids, Vocational Education Readiness Test for Auto Mechanics and Basic Wiring.	Slide Presentation	Completed
MD-6	Dissertation Review, 1965-1983	Monograph	Underway
MD-7	Career Development of Blind and Visually Impaired Persons: Proceedings of the MacFarland Seminar	Publication	Completed
MD-8	Blindness and Low Vision: Maximizing Employment Through Research - Proceedings of the First Research Utilization Conference	Publication	Underway

COOPERATIVE RELATIONSHIPS WITH PUBLIC AND VOLUNTARY AGENCIES

The Rehabilitation Research and Training Center on Blindness and Low Vision recognizes that a comprehensive research and training program designed to enhance the employability of blind and severely visually impaired individuals requires cooperative efforts from many disciplines and many public and private agencies which serve visually impaired and blind people. Consequently, the Center staff works toward developing and maintaining cooperative and responsive involvement of these disciplines and agencies with the Center. During the first 19 months of operation, a considerable effort has been made to develop these relationships.

1. Interuniversity Efforts

The RTC/B-LV is a cooperative project of the Division of Ophthalmology of the University of Mississippi Medical Center, the Handicapped Research and Training Center of the University of Mississippi, and the College of Education of Mississippi State University. While the Center is located on the campus of Mississippi State University, one research project (R-1: Demonstration of a Low Vision Aid Clinic as an Employment Enhancement Technique) and the Dissemination Unit are located at the University of Mississippi Medical Center (Jackson) and at the University of Mississippi (Oxford), respectively. Because of the cooperative involvement of three universities, each of whom has somewhat different educational mission in Mississippi, the Center has a vast array of resources which can be called on to assist with and to participate in research and training programs of the Center. The basic involvement of the three divisions of the universities include professionals from ophthalmology, special education for the visually impaired, biostatistics, low vision services, vocational education, psychology, rehabilitation counseling, sociology, computer sciences, and vocational evaluation. Because of this mix of professionals, each of the projects has an interdisciplinary focus which is appropriate, since the development and implementation of strategies to enhance the employment of blind and visually impaired persons requires more than one discipline.

2. University Interdepartmental Efforts

The primary effort of each of the universities involved in the Center has been to develop an interdisciplinary team on each campus to address those tasks assigned to that university. Consequently, there has been considerable interdepartmental involvement on each campus.

At each of the universities, members of the RTC/B-LV staff are involved in many university committees and are participants in departmental activities on each of the campuses. Center staff are encouraged to participate in departmental activities of each of the universities with the understanding and agreement that those activities are related to the mission of the Center and participation does not detract from activities of the Center. This involvement is primarily focused on departmental activities (curriculum development, student selection, student research activities), and the RTC/B-LV's role in the College.

The RTC/B-LV at Mississippi State University is administratively equivalent to an academic department within the College of Education. Consequently, the director of the RTC/B-LV serves on the College of Education Administrative Council, and the policy and curriculum review committee of the College of

Education. This position permits the RTC/B-LV to have input on many curriculum issues within the College of Education and appropriate visibility within the university structure. The Handicapped Research and Training Center at the University of Mississippi reports to the Vice-Chancellor for Academic Affairs. This position permits the RTC staff at the university to work on many efforts on the campus related to the mission of the RTC.

A. Mississippi State University. Since the establishment of the Center at Mississippi State University, there has been considerable interdepartmental involvement on each of the projects housed at MSU. A listing of the projects, persons, and departmental affiliations follow:

R-2	Industrial Services Program Model for Sheltered Workshops for the Blind	1. Steven Machalow, Ph.D. 2. W.H. Graves, Ed.D. 3. Kent Brooks, Ph.D.	RTC/B-LV RTC/B-LV Research and Curriculum Unit in Voc. Education
R-3	Assessment of Current Career Development Intervention Services and Needs of the Blind/ Severely Visually Impaired Individuals	1. W.H. Graves, Ed.D. 2. Shelly Miles, Ph.D. 3. Steven Machalow, Ph.D.	RTC/B-LV Psychology RTC/B-LV
R-4	Statement of Functional Outcome for Blind/ Severely Visually Impaired Clients of State Rehabilitation Agencies	1. W.H. Graves, Ed.D. 2. Martin Giesen, Ph.D.	RTC/B-LV Psychology
R-5	Illumination Level/ Color Contrast Studies Related to Worker Productivity	1. Shelly Miles, Ph.D. 2. W.H. Graves, Ed.D. 3. George Aarons, B.S.	Psychology RTC/B-LV RTC/B-LV
R-6	Development of Electromechanical Vocational Assessment Technology for Finger Dexterity and Hand/Foot Coordination	1. Martha Bagley, M.S.	RTC/B-LV
R-7a	Modification and Adaptation of the Vocational Education Readiness Test (VERT) for the Blind/Severely Visually Impaired	1. Ed Thomas, Ph.D. 2. Steve Machalow, Ph.D.	Voc. Evaluation Research and Curriculum Unit in Voc. Evaluation

In October, 1982, the Rehabilitation Education Program of the Department of Counselor Education was awarded a long-term training grant from the Rehabilitation Services Administration to initiate and to provide a Master of Education degree curriculum in a program of vocational specialist for persons with visual impairments. The director, training director, and research director team teach three courses in this curriculum. The RTC/B-LV research director and training director are teaching graduate courses entitled "Rehabilitation of Blind and Visually Impaired Persons," "Career Development Services for Blind and Visually Impaired Adults." The research associate for vocational evaluation teaches "Vocational Assessment of the Visually Impaired." The Center director has supervised three doctoral dissertations in the field of blindness since the Center was founded. The topics were The Prediction of Work Status Outcome of Blind Women, Sue Schmitt; Vocational Rehabilitation Outcomes for Blind and Legally Blind Clients as a Function of Urban and Rural Residency, Peter Dietz; Personal and Program Variables Related to the Successful Rehabilitation of Persons Who are Diabetic and Blind, Robert Nelms. This work has served to blind the research program of the Center with the academic program of the university.

In summary, five academic and research units of Mississippi State University are actively involved in the research and training program of the RTC/B-LV at Mississippi State University.

B. Division of Ophthalmology, University of Mississippi Medical Center. Project R-1: Demonstration of a Low Vision Aid Clinic as an Employment Enhancement Technique is being conducted by faculty of the Department of Ophthalmology under the leadership of Dr. Connie McCaa.

C. University of Mississippi. In year 3, the cooperative relationships with the University of Mississippi have been enhanced. A series reviewing doctoral dissertations in the field of blindness has been initiated by Dr. James Mann. Dr. James Mann is also serving as the director of the Mississippi Comprehensive Planning Committee for Blind and Visually Handicapped Children (O-21).

3. Relationships with the State Vocational Rehabilitation Agencies

Since its beginning, the RTC has had satisfying relationships with state rehabilitation agencies. State rehabilitation agencies including those of Georgia, Florida, Mississippi, Kansas, Ohio, Arizona, and Texas for example have been involved in the training, research, and dissemination activities of the Center. As could be anticipated, the Center has worked most closely with the Mississippi Vocational Rehabilitation for the Blind Agency (MVRB). For example, the MVRB director serves as an ex-officio member of the Center's National Advisory Council. He has also served on the screening committee for the RTC Research Director and RTC Training Director. Additionally, the state director reacts to manuscripts of the RTC to assure the materials are sufficiently field and practice oriented.

Research collaboration with state rehabilitation agencies during year 3 has focused on the R-1, "Demonstration of a Low Vision Aid Clinic as an Employment Enhancement Technique," project; R-2, " Industrial Services Program Model for Sheltered Workshops for the Blind," project; and R-9, " Assessment of Visual and Psychomotor Performance as a Function of Varying Stimulus Conditions," project. In each of these projects, clients of the agency have been referred to the RTC

as subjects (R-1 and R-9) and as job trainees (R-2). Data collected from the Florida, Kansas, Mississippi, and Ohio agencies for the R-4, "Functional Outcome for Blind/Severely Visually Impaired Clients of State Rehabilitation Agencies," project continues to be analyzed in year 3 in R-4 and in R-10, "Selected Career Development Factors and the Outcome of Vocational Rehabilitation Services Provided Middle-aged and Older Blind and Legally Blind Individuals."

Involvement of Center staff in the training activities of state rehabilitation agencies increased during year 3. Training projects include T-14, "Planning Strategy for Rehabilitation Research and Training in the Employment of Blind and Severely Visually Impaired Persons," T-25, "Functional Outcome of Vocational Rehabilitation for Blind and Visually Impaired Persons," T-24, "Career Development of Blind and Visually Impaired Persons, " T-29, "Career Development and Vocational Planning," T-30, "Issues in Working with the Blind and Visually Impaired-Training for Facility Personnel," T-35, "Functional Outcome of the Vocational Rehabilitation Process for Blind and Legally Blind Clients of the Florida Division of Blind Services," and T-37, "Georgia Department of Vocational Rehabilitation Evaluator's Training."

State rehabilitation agencies have played significant roles in assisting the RTC/B-LV determine research and training priorities. Three representative from state agencies serve on the Center's Advisory Council.

4. Cooperative Efforts with State Social Service Agencies

Efforts have been made to acquaint various state social service agencies with the RTC/B-LV. Our primary efforts have been with the state schools for the visually impaired, state departments of special education, and the Mississippi State Board of Public Welfare. Center staff have met with each of these groups on several occasions this year to orient them to the RTC/B-LV, identify mutual areas of concern, and explore ways in which the Center and agency might address research and training needs. At this point, the most fruitful efforts have occurred with the State Board for the School for the Blind. In late 1982, a training conference (T-15) was held for the staff of the Mississippi State School for the Blind. In 1983-1984, the RTC/B-LV has cooperated with the Board of the State School for the Blind in development of a model state plan for the delivery of educational services to children and youth with visual impairments.

5. Cooperative Efforts with Other Agencies

Center staff maintain close working relationships with a variety of agencies and facilities serving visually impaired people. In 1981-1983 four research projects (R-1, R-7, R-5, and R-6) are being conducted at or use clients from Mississippi Industries for the Blind as subjects. To achieve the goals of projects R-1, R-5, and R-6, Mr. George Aarons, Research Technician of the Rehabilitation Division of National Industries for the Blind, has been able to provide the Center, at no cost, about 50% of his time. Additionally, space for RTC projects at Mississippi Industries for the Blind has been provided at no cost to the Center. Project R-6 also involves about 20% of time of the vocational evaluator of the Louisiana Association for the Blind (Shreveport) at no cost to the RTC. In 1981-1984, collaborative research efforts with private, non-profit agencies serving the visually impaired represented about 40% of the workload of the Center staff.

6. Relationships with Consumers

The primary focus of consumer input for the RTC/B-LV is one of information dissemination and project evaluation. Representatives of those consumer organizations in Mississippi such as Mississippi Council for the Blind, Mississippi Federation of the Blind, and Mississippi Business Enterprise Association, work with the Center in this important area. Representatives of the American Council of the Blind, Blinded Veterans Association, and National Federation of the Blind serve on the Advisory Council of the Center. Center staff have participated in and met presentations at state and national meetings of the American Council of the Blind and of the National Federation of the Blind. The National Association of the Parents of the Visually Impaired, Inc. participated in R-3, "Assessment of Current Career Development Intervention Services and Needs of the Blind/Severely Visually Impaired Individual" as did the American Council of the Blind.

NATIONAL ADVISORY COUNCIL

The National Advisory Council has its annual meeting in January, 1984. The Council is charged with providing the Center staff counsel on proposed and current research and training activities. The 20 member National Advisory Council, six of whom are ex-officio, represent visually impaired consumers, employers of visually impaired persons, and providers of medical, educational, and/or rehabilitation services to visually impaired persons from across the United States.

The Council meets annually in order that its recommendations relate meaningfully to the research, training, and dissemination functions of the RTC. Moreover, meetings in each project year will enable the Council to review project progress thereby taking interim products into account in their recommendations. Six council meetings have been planned: two the first year, one the second, and one in years three through five. Meetings will be held at Mississippi State University. Two-day council meetings are planned.

The Advisory Council is conceived as one in which different perspectives are represented thus differences of view as to what constitutes appropriate research and training activities may well occur. While adversarial positions are not foreseen nor are serious disagreements among the Council members, the RTC recognizes that, insofar as is possible, Center staff must try to accommodate divergent views. This will assure the development of research and training efforts with maximum applicability and usefulness.

1. Names and Titles of Current Members

The 1983-1984 Advisory Council membership was as follows:

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2. Function of Advisory Council

The National Advisory Council has four major functions with direct implications for the activities of the RTC/B-LV. These functions and associated activiteis are as follows:

National Advisory Council Functions	RTC/B-LV Activities
A. Define broad coverage of issues affecting the employment potential of the blind/severely visually impaired citizen.	Select specific research topics, identify research needs in the topic area, develop research strategies, implement research strategies, perform data analysis, review findings with Council, report activities, and develop and implement training projects based on research findings.
B. Assist in establishing research and training priorities for the Center by providing feedback concerning the significance of proposed projects to the field.	Initiate, develop, and report RTC activities
C. Assist in specific research/training projects of the RTC/B-LV	Conduct research activities and develop approriate training procedures.
D. Identify key issues and considerations which should be addressed in workshops, dissemination, and utilization activities, and recommend forms of technical assistance that would be most useful to various consumers of the RTC/B-LV products.	Disseminate information, workshops, and conduct technical assistance project.

3. 1983-1984 Meeting of the Advisory Council

The annual meeting was called to order by the chairperson, Mr. Paul Scher. The purpose of the meeting was to provide an opportunity for the members of the Advisory Council to review the activities of the Center's continuing projects to review proposed research and training projects, and to establish priorities for the direction of the Center. Information about expectations of the NIHR for the Center was reviewed by the director. Center staff activities related to the Center mission were listed for the Council.

4. Outcome of Advisory Council Meeting

There were several important outcomes of the annual meeting. The Advisory Council assisted in establishing priorities for future research activities, resolving issues raised in several on-going projects, and responding to preliminary results from several research projects. The Research committee of the

Advisory Council identified the Work Environment Visual Demands Protocol development and evaluation as a top priority. Other issues identified related to the career development intervention strategy model. The Training Committee of the Advisory Council reviewed the training, disseminations, and materials development reports. Training priorities were identified as were priority trainees. The Training Committee recommended strongly that training activities of the RTC be based on research activities of the Center.

The Advisory Council membership continued to express its support and appreciation for the direction of the Center's work, the commitment of the staff, and the progress the Center staff has made.

Mississippi State University does not discriminate on the basis of race, marital status, color, religion, national origin, sex, age, or handicap.

In conformity with Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973, T. K. Martin, Vice President, 610 Allen Hall, P. O. Drawer J, Mississippi State, Mississippi 39762, office telephone number 325-3221, has been designated as the responsible employee to coordinate efforts to carry out responsibilities and make investigation of complaints relating to discrimination.